

Challenging Depression Criteria:
An Exploration of Men's Experiences of Depression

by

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LIST OF ABBREVIATIONS

BDI	Beck Depression Scale
CPES	Collaborative Psychiatric Epidemiology Surveys
DSM	Diagnostic and Statistical Manual
ESEMed	European Study of the Epidemiology of Mental Disorders
GMDS	Gotland Male Depression Scale
GIDS	Gender Inclusive Depression Scale
HADS	Hospital Anxiety and Depression Scale
ID	Irritable Depression
MDD	Major Depressive Disorder
MDE	Major Depressive Episode
MDI	Major Depression Inventory
MDS	Masculine Depression Scale
MSS	Male Symptoms Scale
NCS-R	National Comorbidity Survey Replication
NLAAS	National Latino and Asian American Study
NSAL	National Survey of American Life
STAXI	State Trait Anger Expression Inventory

Chapter 1: INTRODUCTION

Depression is a costly and debilitating illness; in the United States, the estimates are that approximately 16% (over 32 million people) will meet the criteria for Major Depressive Disorder in a given year (Kessler et al., 2003). Countless studies have investigated the prevalence, causes, effects, and treatments of depression in various disciplines ranging from medicine, psychology, and public health. One of the key findings from prevalence studies has been a difference in depression rates between the sexes, with women diagnosed with depression two times more often than men. This sex ratio appears repeatedly in almost every setting, including large community studies conducted in the West and most Non-western studies (Bebbington, 1998; Kessler & et al., 1993; Meltzer, Gill, Petticrew, & Hinds, 1995; Wolk & Weissman, 1995). This finding has been the driving force behind years of research that sought to identify explanations for why women could be at greater risk for developing depression than men. During this time being male was viewed as a protective factor against depression (Diamond, 2005). This approach, which focused on exploring women's innate vulnerability to depression, makes a critical assumption that what is measured as depression is a valid representation of the disorder.

Recently, an alternative explanation for the sex difference in depression has been proposed. Rather than focusing on women, it has been suggested by many (including researchers, clinicians, and the American Psychological Association) that that the

diagnostic criteria may be underdetecting depression in men. The critique argues that the current diagnostic criteria are gender-biased, which leads to an under-diagnosis of men with depression. To elaborate, this critique states that depression in men is not a different phenomenon than what is diagnosed in women. Rather, the ways men and women are socialized in this country, along with our cultural understanding of depression have made it more difficult to recognize depression in men. Men may be experiencing symptoms other than those listed in the Diagnostic and Statistical Manual (DSM), which provides the diagnostic criteria for mental disorders (American Psychiatric Association, 2000).¹

Typical symptoms reported by women often include a change in mood, feelings of sadness, crying, hopelessness, and changes in eating and sleeping patterns. Men with depression, however, may instead present with loss of concentration, increased substance use, irritability, increased anger outbursts, withdrawal, and sleep deprivation (Diamond, 2005). Men's behavioral changes are often noticed first by others and are related to their perceptions of inadequacies in their role as provider; often characterized by withdrawal from close relationships, an over-involvement with work activities, and avoidance of help from others (Pollack, 1998).

A review of the current literature addressing men and depression reveals two important themes. First, it is thought that there is a lack of recognition that what men are experiencing is depression because their symptoms and experiences differ from traditional presentations. Second, even if the problem is recognized as depression, men are less likely to report their symptoms because their symptoms are at odds with ideals of

¹The manual has undergone several revisions (e.g., DSM-III, DSM-III-R) and the current version is DSM-IV-TR.

masculinity and the social constructions of gender roles. These two factors could be contributing to the lower prevalence of depression among men that epidemiologic studies have been reporting for the last twenty years (Greenley & Mechanic, 1976; Kessler & et al., 1993; McKay, Rutherford, Cacciola, & Kabasakalian-McKay, 1996).

Although the idea that men's depression may present with different symptoms is beginning to gain momentum in both academic and popular discourse, the research community has yet to investigate these claims empirically. The development of new, or the modification of existing, diagnostic tools is needed to provide support for the proposed theory of male depression. While claims have been made by influential parties, including the American Psychological Association (APA), suggesting the existence of a different expression of depression in men, the epidemiologic community has yet to adequately investigate these claims. The symptoms that remain in DSM-IV and instruments used for epidemiologic research do not make any allowances for this atypical expression of depression. The investigation of whether men exhibit alternative symptoms outside the current diagnostic criteria is an important step. If evidence to support these claims were found, then the modification of existing measurement tools would be needed. The goal would be to educate providers in multiple settings (psychologists, psychiatrists, and primary care physicians) so that men's symptoms would be recognized and the appropriate treatment could be recommended.

The study of men and depression is a new area of research that emerged in the last few years and has become more widely accepted since the introduction of the "Real Men, Real Depression" campaign led by the National Institute of Mental Health. This national media campaign, which includes television, print, and Internet messages, has garnered

attention in both academic and popular press. An article in *Time Magazine* on September 22, 2003 referred to the campaign and stated,

“[Men] are less likely to recognize their condition through the cloud of seemingly beside-the-point feelings like anger, apathy, and low self-esteem. In addition, even when they know what they have they are less likely to acknowledge it to others or seek treatment. They are also more likely to self-medicate with drugs or alcohol and four times as likely to kill themselves” (Kluger, 2003).

This quotation provides a general description of the problem – if men do have different symptoms of depression, then they are less likely to recognize that what they are experiencing is depression. As a result, they are less likely to seek help and obtain treatment. Underutilization of mental health services among depressed men has disastrous outcomes including substance abuse and suicide.

RESEARCH QUESTION & OVERVIEW

The research question that drives this dissertation is: How can the sex differences in rates of depression that have consistently been found in epidemiologic studies be explained? Is it true that women are more depressed than men, or is depression underdetected in men because the male experience of depression differs from that of women?

The dissertation seeks to contribute to the debate on men’s different expression of depression in two ways. The first is through a review of the current findings relevant to these ideas as well as a discussion of why men might be experiencing depression differently from current definitions. The second is through two empirical analyses that evaluate existing data for support of alternative male depression symptoms. Each chapter is described in more detail later, but a brief overview is provided here. Chapter Two examines the theory of an alternate experience on depression in men, seeking to answer

the following questions: Is the current definition of depression socially constructed in a way that is more consistent with a female expression of disease? What space exists for men to express their feelings of emotional pain and suffering that accompanies depression? The chapter presents arguments for why men would experience depression through alternative symptoms than those currently assigned to the diagnosis of depression. This is accomplished through a critical reading of the existing literature on men and depression as well as the historical development of the current diagnostic criteria. The history of how the DSM-III revolutionized psychiatry to become the diagnostic "bible" is a story that is often overlooked, and one in which the key players themselves offer criticism about the validity of the diagnostic criteria (Kirk & Kutichins, 1992). Next, Chapter Two discusses how masculinity scripts that are commonly enacted in the United States, and much of the Western World, are in direct conflict with the current diagnostic criteria. Finally, the current clinical and empirical literature is reviewed for evidence of alternative criteria by which to identify depression in men.

Chapters Three and Four examine existing epidemiological data for evidence of men's alternative experiences of depression that, if included in the diagnostic criteria, would reduce or eliminate the gender gap in depression prevalence rates. Chapter Three examines the Irritable Depression (ID) variables in a dataset that combines the National Comorbidity Survey – Replication (NCS-R) and the National Latino and Asian American Survey (NLAAS). Irritability has been proposed in the popular and clinical literature as one of the alternative symptoms that depressed men may display. Beginning with DSM-III and throughout its revision process, irritability has moved in and out of the depression diagnostic criteria. Currently, irritability is accepted as an equivalent of dysphoric mood

in children and adolescents, but not adults. It is possible that no longer assessing irritability as a symptom of depression in adults contributes to the lower rates of depression reported among males. ID is an alternative expression of depression that does not currently constitute a DSM-IV diagnosis. ID differs from Major Depressive Disorder namely with the substitution of an irritable mood in the place of dysphoric mood. Chapter Three includes the construction of the ID algorithm and assess sex differences in ID prevalence, specific symptom differences, and predictors.

Chapter Four uses variables also from the National Comorbidity Survey – Replication to build on the results of Chapter Three. Chapter Four includes irritability and other proposed alternative symptoms of male depression suggested by the literature to create two new scales designed to measure Male Depression; the Male Symptoms Scale (MSS), and the Gender Inclusive Depression Scale (GIDS). Both scales consist of alternative symptoms such as anger attacks, alcohol and substance abuse, acting out, and social withdrawal in addition to the traditional depression symptoms.

Chapter Five places the findings from the previous chapters within a larger context. Specifically, it addresses the inevitable “So what?” question. So what if men are underdiagnosed with depression? What is gained by expanding the depression diagnostic criteria to include these broader experiences? This chapter argues that there is something valuable in the re-examination of depression itself and that doing so would be more useful than simply expanding the DSM to create a new disorder. Depression is a debilitating illness with great costs to the people suffering from it. In order to help people we first have to be able to identify who they are. This chapter also discusses the limitations of the dissertation and describes future steps for continued research.

BACKGROUND

The possibility that men and women have different symptoms for a common ailment should not be surprising. There are other examples in the medical world where the intersection of sex and society has affected health conditions. A well-known example is heart disease. For years, heart disease was thought to be a male disease. This led to an underdiagnosis and lack of recognition of how fatal heart disease is for women. Heart disease, stroke, and other cardiovascular diseases are in fact, the leading cause of mortality and morbidity of women (American Heart Association, 2005). Most of the research and diagnostic tools for detecting heart disease came from studies that excluded women in the sample. When surveyed in the community, women were often unaware of their risk of dying or suffering from heart disease.

“... women often have described myocardial infarction (MI) as a ‘male problem’ and more often attributed the symptoms of MI to other chronic non-cardiac conditions. Historically, the description of symptoms associated with MI was based on the presentation characteristics of men. Women’s symptoms of MI are often labeled as ‘atypical’ and different from the ‘classic’ MI symptoms noted in men and include a constellation of associated symptoms, usually without chest pain or discomfort” (Canto et al., 2007).

Men often present with the "classic" heart attack symptoms including tightness in the chest, arm pain, and shortness of breath. Women’s top five reported symptoms include extreme fatigue, difficulty sleeping, shortness of breath, indigestion, and anxiety.

Women's symptoms are often attributed to stress (McSweeney et al., 2003). Researchers have also found that not only are women less likely to recognize the symptoms they are experiencing as a heart attack, but they are often misdiagnosed and not sent for the same standard diagnostic testing when seeking medical care (Battleman & Callahan, 2001).

The medical and public health communities learned an important lesson from these data and launched a successful national campaign to educate women about their risk of heart disease. The mental health community could learn from the gendered history of heart disease as it mirrors what is happening with men and depression, only with a reversal of men's and women's roles. In depression, the prevention, diagnosis, and treatment research have focused much more on women than men. There is a misconception that depression is a disease predominantly affecting women. Recently it has been proposed that men might experience different symptoms, which lead both the general population and clinicians to miss the presentation of the illness. Throughout the rest of this exploration of men's experiences of depression, it can be helpful to remember the heart disease story and lessons learned.

Although Chapter Two includes a more complete review of the current literature on men and depression, an introduction to the issues it addresses is provided here as background. Within the current literature, there are two important themes with respect to male depression. Over the past 10 years, several books have been published by clinicians interested in bringing to light the idea of an atypical expression of depression in men. The intended audience includes the public, other clinicians, and researchers. Much of the material discussed in these books is similar to one another. First, there is a discussion of the traditional definition of depression, followed by descriptions of clinical experiences and patients who have suffered from depression, but presented atypically. The main finding summarized across these works is that the clinician who only looks at classic symptoms of depression will miss it in their male patients. Men often mask, hide, or present a different picture of depressive symptoms.

Concerning empirical research on men and depression, little work has been done so far in investigating the possible existence of an atypical male depression. To date, there has been no single large-scale community survey conducted including the proposed alternative symptoms experienced by men. However, several smaller studies have looked at men and depression. The empirical work reviewed in Chapter Two will include research reporting sex differences in prevalence rates of depression, studies involving two measures of male depression, the Gotland Male Depression Scale and the Masculine Depression Scale, and the suicide paradox.

Although the idea of men's alternative expression of depression is beginning to gain momentum in academic and popular discourse, the research community has yet to investigate these claims empirically. The development of new diagnostic tools (or the modification of existing ones), is needed to provide support for the proposed existence of a male-specific type of depression. The APA website contains an article entitled "Men: A Different Depression" that summarizes the current findings. It says,

"Clinicians are increasingly aware that they must be sensitive to depression danger signs for men that are different than those for women. Psychologists and other mental health providers are also giving special attention to men's mental health issues given men's greater resistance to even seeking treatment, their greater discomfort with emotional expression and their higher risk of abusive anger, substance abuse, risky behavior, and suicide" (American Psychological Association, 2005)

The symptoms that remain in DSM-IV and instruments used for epidemiologic research do not make any allowances for this atypical expression of depression. If evidence to support these claims were found, then the modification of existing measurement tools would be needed. The goal would be to educate providers in multiple setting

(psychologists, psychiatrists, and primary care physicians) so that men's symptoms would be recognized and the appropriate treatment could be recommended.

SUMMARY

The literature proposes that men do not (and should not be expected to) experience depression in the way that it is currently understood and measured. Men are socialized from an early age to turn away from the emotional experiences of life, to suppress any sign of vulnerability and weakness. Depression is understood today to be an emotional disorder characterized by sad mood, withdrawal inward, crying, and tiredness. The common understanding among popular culture is that depression is a women's disease, one that does not affect men at the same rates. This simply might not be true. Men might be equally as likely to suffer the emotional devastation of depression, but be less likely to recognize that what they are experiencing is depression. Instead, depressed men attribute their problems to stress, which is a more culturally acceptable message.

As stated earlier, one of the single most replicated findings from psychiatric epidemiologic studies is that women are more likely to be diagnosed with depression. This dissertation argues that this finding can be explained in part by the fact that the current diagnostic criteria are not effective at assessing depression in men. In this dissertation, I will examine evidence that assesses how depression is experienced in men. This could help develop instruments that are more inclusive of both men and women's experiences of depression. In thinking of long-term effects, better measures would result in more accurate estimates of prevalence rates. Studies have shown that men are more likely to seek help for conditions that they feel are normal, conditions that are not

stigmatized. Depression is considered by many to be a "women's disease," therefore, it does not fall into the realm of "normal" diseases that men are expected to have. As a result, men experiencing symptoms consistent with the definition of depression are less likely to seek help. If we can clarify whether men with depression are at risk of being underdiagnosed, and if researchers are able to disseminate that message, men might be more likely to seek help. Overall, this work could help to reduce the stigma associated with depression in general, and specifically for men suffering from depression.

Before moving forward to Chapter Two, I would like to state that in thinking about the development of male depression I have spoken in very broad terms about men and women. This does not mean that I feel that what is being described and seen in the literature reflects the experiences of all men and all women. Surely, there is the possibility that men will present with classic depression and there may be women whose depression appears "male." At this point, during the early stages of theoretical development, it is necessary to speak in the broadest of terms but it is also important to acknowledge that heterogeneity in the expression of depression within the male population must surely exist.

In summary, it may be the case that women will exhibit the classic symptoms of feeling sad, crying, and withdrawing from social relations and activities. Men, on the other hand may be less likely to feel sad and instead become very irritated, with a lower threshold for stressful situations. Anger, aggression, and somatic symptoms are more likely to be experienced. Men's behavior might change so that they become almost obsessively active, perhaps at work or working out, as if they are trying to outrun the depression by keeping active and productive at all times. They are also more likely to

mask their depression with substance use or risk taking behaviors (Cochran & Rabinowitz, 2003; Diamond, 2005; Kantor, 2007).

The catalysts for developing depression may also be different for men and women. Men's depression is more likely to be brought on by feelings of limitation, frustrations of being held captive or held back in the workplace, fear of failure, or feeling that they are not fulfilling their own expectations and ideals of manhood and success (Diamond, 2005; Kantor, 2007; Möller-Leimkühler, Bottlender, Strauß, & Wolfgang Rutz, 2004; Pollack, 1998). Women, on the other hand, usually report relationship issues as being a significant trigger of their depressive episodes. While these differences are not related to the symptoms of depression, they are related to how clinicians and researchers need to pay attention to different cues when assessing a person for depression. Men could very well enter the clinical setting talking about work frustrations and fear of failure long before they ever talk about depression. Clinicians discuss how to assess depression in men and call for training problems to encourage practitioners to look for these alternative behaviors as signs of depression. It is now time for the social science research community to take the information provided from clinicians and examine male depression in our own research studies.

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Chapter 2: LITERATURE REVIEW

INTRODUCTION

This chapter explores the current literature to gain a better understanding of how men might experience depression differently than how the disorder is currently defined by the DSM. It is divided into two parts. The first part explores how masculinity might influence men's experiences of depression and lead to men being underrepresented in current estimates of depression. The second part of the chapter accepts the assumption that men's experiences of depression are not being captured by current measures and methods, and reviews the literature to explore what modifications are needed to better recognize and treat men with depression.

A review of the literature suggests that men are missed in the current research estimates for two reasons. First, men may be underreporting symptoms of depression. Second, men may experience depression differently and as a result, exhibit symptoms that are not included in the current diagnostic criteria. A review of the relationship between men, masculinity, and depression highlights why men might be unwilling to report depression symptoms as well as what other symptoms should be included to accurately measure men's depression.

Ultimately, if it is accepted that men experience depression in a way that is not captured by the current diagnostic criteria and assessment tools, then the criteria need to be modified and new assessment tools developed. Part of the critique by clinicians is the

claim that the current criteria are biased against men's experiences of depression. By understanding what political and gendered forces were involved in the creation of the disorder, we can see how men's experiences may have been ignored. In addition, understanding the history of the diagnostic process illuminates the fact that these criteria sometimes change in response to the current social pressures.

The second part of this chapter reviews and critiques the few empirical studies that have tried to assess alternative expressions of depressive symptoms in men. One example of an alternative symptom proposed by the literature is irritability. The construct of irritability has shuffled in and out of the depression definition over time. Recently, it has been suggested that irritability may be the missing key ingredient of men's depression (Diamond, 2005; Pollack, 1998). Namely, that instead of feeling sad when depressed, men get irritable. (Exploring the relationship between irritability and depression is the focus of the analysis in Chapter Three.) In conclusion, this chapter will provide a greater understanding of men and depression. It will assess why the current diagnostic criteria are inadequate for assessing depression in men and what steps are needed to address this inadequacy.

MASCULINITY AND ITS RELATIONSHIP TO MEN'S HEALTH

Masculinity is a term used in everyday conversation and most people assume they know what is meant when they hear it. In fact, studies have shown that in U.S. society most people do agree on what are typical masculine and feminine traits (Courtenay, 2000; Golombok & Fivush, 1994; Williams & Best, 1990). Many view masculinity as a stable construct that men have, a list of traits that define what a man is, and assume that it has had the same meaning since the beginning of human existence. However, as gender

theory has evolved, it has become clear that masculinity is a concept that defies a simple definition, as it is created by culture and constantly changing over time. In his book *Masculinities*, Connell reveals that concepts of masculinity are actually relatively new, having only existed for the past few hundred years. He argues,

“Masculinity, to the extent to which the term can be defined at all, is simultaneously a place in gender relations, the practices through which men and women engaged that place in gender, and the effects of these practices in bodily experiences, personality, and culture” (Connell, 2005).

As a result of Connell’s work, it is more common to view masculinities as multiple, contested, dynamic, and socially located in both time and place. Masculinity can mean different things for different people, as well as different things for the same person at different points of time. This is not to say that commonalities between different expressions of masculinity are rare, or that it is difficult to identify a dominant type of masculinity. Rather, it is important to remind the reader that there is no *one* type of masculinity that describes all men.

The link between masculinity and health has emerged as a leading area of research. As research expands to try to understand how masculinity interacts with health and health behaviors, it is important to guard against pathologizing masculinity itself. Traditionally, men’s behaviors and masculinity have been thought of as normal and neutral. There has been very little discussion of how men’s behavior and the health risks associated with those behaviors are potentially problematic. “The consistent, underlying presumption in medical literature is that what it means to be a man in America has no bearing on how men work, drink, drive, fight, or take risks” (Courtenay, 2000). Now,

research is beginning to reject this assumption and investigate the role masculinity plays in men's health.

This chapter contributes to a body of work investigating the link between masculinity and mental health, with a focus on depression. However, while the chapter explores how masculinity influences men's experiences of depression it is important to note that the goal is not to suggest that traits associated with men are inherently bad and should therefore indicate a mental disorder. Rather, it is important to recognize the ways men display and cope with emotional pain so that we can then provide support and resources to help them. Historical notions of accepting men's behavior as neutral and normal may have left clinicians and researchers ill prepared to recognize when men are asking for help, because they do it in ways that are not currently recognized in either clinical settings or research.

Within our society, traditional masculinity has been accepted as the norm, often only discussed in terms of being the opposite of feminine, related to women. Our society also organizes certain emotions, traits, and conditions to the realm of masculine, feminine, or gender neutral. If an illness is seen as predominantly affecting women, it is categorized as a feminine disorder. Depression is one such disorder that has been categorized as "feminine" (Magovcevic & Addis, 2008). For men who identify with traditional notions of masculinity it would be threatening to his sense of self to be diagnosed with a "feminine disorder" such as depression. This could cause him to ignore, conceal, or deny the presence of depression in order to protect his sense of self. Naturally, not all men would react this way, and not all men adhere to the same notions of masculinity. Therefore, understanding which traits are important to most men might

be an important point to consider when investigating how masculinity and depression are related. The next section reviews studies that have attempted to do just that.

CONFORMITY TO MASCULINITY STUDIES

Research that has looked at depression and masculinity tends to study the concept of gender role, rather than masculinity. The two concepts are related, but separate. As defined by Connell earlier, masculinity is always changing and contains an almost infinite number of definitions. However, most societies can identify a hegemonic masculinity, which is defined as the dominant or commonly accepted traits assigned to the masculine role in a society. Members of that society then have to decide how much they accept and try to embody these traits, a process that is known as conformity to masculine norms (Mahalik et al., 2003). O'Neil (1990) describes the messages purported by hegemonic masculinity that males often internalize:

1. Men are superior to women and masculinity is superior to femininity.
2. Power, control, and competition are essential to prove masculinity.
3. Emotions, feelings, vulnerabilities, and intimacy are to be avoided because they are feminine.
4. Career success and sexual potency are measures of masculinity.

Depression, as it is currently defined, is at odds with each of these notions of masculinity. First, it is spoken of in society as a “woman’s disease” making it feminine (Magovcevic & Addis, 2008; Diamond, 2005). Second, when suffering from depression there is often a feeling of powerlessness and loss of control. Third, the language of depression is almost entirely couched in discussion of emotions, feelings, and vulnerability. If a man experiences symptoms of depression, it might also be experienced as a threat to his masculinity because such symptoms could lead to appearing vulnerable. Fourth, depression often impairs a person’s ability to perform at work and decreases

sexual interest. Therefore, depressed men who are trying to enact this hegemonic masculinity would be less likely to recognize or to admit that they are experiencing is depression. They might in fact express or display symptoms not currently thought to represent depression within the DSM. Men who value their current position of power and control are likely to go to great lengths to maintain their high social position, or at the very least, not act in a way that weakens them. This could include ignoring or actively suppressing symptoms, or, keeping their existence secret to avoid labeling themselves as depressed, which in their minds may be equivalent to weakness. Therefore, if a disorder such as depression is defined by feminine behaviors, men will be less likely to report those symptoms for fear of being perceived as unmanly.

In summary, the hegemonic masculinity messages men are raised with in U.S. society are to show no weakness, to look for external causes and explanations of pain, and actively deny their feelings of distress. Therefore, it is not surprising that when asked about typical depression symptoms, such as feeling sad or crying, most men will respond that they do not have those experiences. However, that does not mean that they could not be in serious emotional pain and are depressed; it just means that we do not know it because we are not capturing their experiences of depression in our studies. The following quotation illustrates one man's experience with depression. He speaks about how the very traits society valued in him, stoicism and self-reliance were at odds with battling depression and debilitated him in some ways more than the depression symptoms themselves.

“I could tolerate almost all of the symptoms; I could even rationalize them as admirable character traits. If I refused to communicate, I was the strong silent type. If I isolated myself from others, I was a self-sufficient lone

wolf. If I found no pleasures in life, I was purifying myself by choosing the path of monastic self-sacrifice. But I could not rationalize, I could find nothing to admire about myself, as depression descended on me and I broke down...” (Head, 2004)

DIAGNOSTIC CRITERIA AND UNDERDETECTION OF MEN’S DEPRESSION

The previous section introduced the idea that our society views depression as a “feminine” disorder and that it is at odds with the dominant notions of masculinity. This next section critically examines the current diagnostic criteria for specific examples of the mismatch between depression and masculinity. It then summarizes the history of how the current criteria were arrived at in the hopes of understanding how men’s experiences were not included in the criteria.

Several researchers have argued that the current depression diagnostic criteria are biased towards including women and excluding men (Cochran & Rabinowitz, 2000; Diamond, 2005; Galasinski, 2008; Pollack, 1998). The classic symptoms of depression include feelings of sadness, helplessness, hopelessness, changes in eating and sleeping patterns, low self-esteem, lack of energy, crying and isolating oneself from others. The DSM-IV criteria for major depression are as follows:

Major depressive episode:

- A. A person must have experienced at least five of the nine symptoms below for the same two weeks or more, for most of the time almost every day, and this is a change from his/her prior level of functioning. One of the symptoms must be either (a) depressed mood, or (b) loss of interest.
 - a. Depressed mood. For children and adolescents, this may be irritable mood.
 - b. A significantly reduced level of interest or pleasure in most or all activities.
 - c. A considerable loss or gain of weight (e.g., 5% or more change of weight in a month when not dieting). This may also be an increase or decrease in appetite. For children, they may not gain an expected amount of weight.
 - d. Difficulty falling or staying asleep (insomnia) or sleeping more than usual (hypersomnia).
 - e. Behavior that is agitated or slowed down. Others should be able to observe this.
 - f. Feeling fatigued, or diminished energy.
 - g. Thoughts of worthlessness or extreme guilt (not about being ill).
 - h. Ability to think, concentrate, or make decisions is reduced.

- i. Frequent thoughts of death or suicide (with or without a specific plan), or attempt of suicide.
- B. The persons' symptoms do not indicate a mixed episode.
- C. The person's symptoms are a cause of great distress or difficulty in functioning at home, work, or other important areas.
- D. The person's symptoms are not caused by substance use (e.g., alcohol, drugs, medication), or a medical disorder.
- E. The person's symptoms are not due to normal grief or bereavement over the death of a loved one, they continue for more than two months, or they include great difficulty in functioning, frequent thoughts of worthlessness, thoughts of suicide, symptoms that are psychotic, or behavior that is slowed down (psychomotor retardation) (DSM-IV, 2000).

As stated in Chapter One, the data from large-scale community studies find that the number of men who suffer from depression is less than the number of women. However, that seems to be where the difference between the sexes and depression ends, as the course of the illness for the two sexes is remarkably similar. A study by Young, Scheftner, Fawcett, and Klerman (1990) found that women's report of increased appetite and weight gain to be the only significant difference in symptom profiles between men and women in a clinical sample of patients diagnosed with unipolar MDD. They found no sex differences in symptom severity or impairment in functioning. Frank et al. (1988) also investigate sex differences in depression and found no differences in the age of onset, number of episodes, episode duration, or clinician-rated severity. The authors compared the patient's symptom profiles, as evaluated by both clinical assessment and self-report, using the Beck Depression Inventory. They found that women endorsed more items on the self-report measures than men. Simpson et al. (1997) confirmed Frank et al.'s findings in a study that found no sex differences in the recovery time, number, and severity of episodes. These studies all suggest that, except for the increased sex ratio of women to men in the prevalence of cases, the course of depression is actually quite similar between the two sexes. There are similar symptom profiles, severity of symptoms, the length of time that an episode lasts, and the risk of recurring episodes.

Why, then do some researchers and clinicians insist that the community rates underestimate the prevalence of depression in men?

The answer lies in the interaction between culture and diagnostic criteria. In their work, “Men and Depression: Clinical and Empirical Perspectives,” Cochran and Rabinowitz (2000) state, “traditional diagnostic criteria [are] biased toward feminine means of expressing emotional distress.” The key phrase to understanding how the criteria may be biased against men is the word “expressing.” In order to be diagnosed with depression, or meet diagnostic criteria in a research study, the respondent (or patient) must report the presence of the symptoms included in the DSM definition of depression. A depression diagnosis or categorization (in the case of research) requires an act of self-disclosure, which may be more difficult for men than women.

At the core of the argument that proposes a difference in male depression is the notion that men’s socialization and stereotypical notions of masculinity are at odds with what is typically recognized as depression. Men are taught to withhold expressions of emotions, while encouraged to express confidence in all circumstances, control, independency, rationality, competitiveness, success, and invulnerability. Cultural notions of what it means to be a man are interacting with the diagnostic criteria in a way that limits the opportunities for men to express their depression. For some men it is not that they do not experience sadness, but rather that they cannot tell someone about experiencing sadness. Many men would not admit to crying or having feelings of guilt or self-blame, because doing so would be admitting to a weakness or a failure. This leaves men without an acceptable social structure in which they can express their feelings or describe their experiences.

On the other hand, the current criteria are not in any way at odds with notions of femininity – a woman would not “lose face” with others for admitting to being depressed in the same way that a man would. A close examination shows that the criteria include words that in our society typically describe female expressions of emotion, such as crying when experiencing sadness. Reporting feelings of guilt, sadness, worrying, crying, and self-blame are all internalized reactions often associated with women. It is acceptable in our society for women to experience and express these feelings of guilt, to admit to feeling sad and crying to others. In fact, women are often stereotyped as constantly wanting to share and talk about their emotions and emotional problems.

The idea that men would be less forthcoming about the presence of depression symptoms is supported by the literature. For example, Frank et al. (1988) found that women were more likely to score higher on self-report instruments like the Beck Depression Inventory, which suggests that studies relying on self-report may always have underreporting by men. In addition, as men recover from their depression, they may be less likely to report which symptoms they used to have. Angst and Dobler-Mikola, (1984) conducted a study in which they re-contacted people who had been diagnosed with Major Depressive Disorder (as defined by DSM-III criteria) and asked them to recall which symptoms they had experienced. The authors found that women tended to remember all of their symptoms, while men’s recall of symptoms decreased as the time since the depressive episode increased. Specifically, men tended to better remember appetite, sleep, and energy problems and forget symptoms such as worrying, poor concentration, and feelings of worthlessness. Interestingly, men tended to remember the symptoms that were more somatic, while they forgot symptoms that made them appear to

be emotionally vulnerable. This suggests that the men were acting in a way to deny ever having symptoms that could be damaging to a socially desirable self-image. Men appear to be less willing to admit to symptoms that threaten their self-image of manhood, both during and after their depressive episode. This poses a challenge for clinicians and researchers, as they are forced to rely on self-report in order to determine if a man is depressed.

If men are less likely to report depressive symptoms, then how are researchers and clinicians expected to detect depression in men? Recently, several books, both academic (Cochran & Rabinowitz, 2000; Pollack & Levant, 1998; Galasinski, 2008) and popular (Diamond, 2005; Hart, 2001; Kantor, 2007; Real, 1998) have suggested that men will try to mask their emotions, and some men may not even recognize what they are feeling. However, while masking certain symptoms, men will exhibit other clues that can be identified. This includes acting out as a reaction to increased irritability and anger, such as lashing out at family and friends. Lashing out allows the man to identify an external source of this pain and lets him shift the blame and attention onto others and away from himself, masking his own pain. Some men may turn to distraction or high-risk activities, such as increased gambling, or trying to numb the pain with alcohol, drugs, or sexual activity. These authors all propose that when clinicians or researchers are evaluating men for depression they should include these other behaviors in addition to the traditional depression criteria, as they may be the only clues men are willing to disclose.

ARGUMENTS FOR CHANGING THE DSM CRITERIA

The diagnostic criteria defining mental disorders are far from perfect or set in stone, and they were actually never intended to be (Andreasen, 2007). Diagnostic criteria

for psychiatric disorders are social constructs that seek to explain and define discrete disorders and psychiatric illness experiences of clinical patients. This means that they should be expected to change over time, as society's views on what is "abnormal" change. Therefore, they are also open to critique, as someone decides what to include and what to leave out. Our current notions of MDD stem from the publication of the third edition of the Diagnostic and Statistical Manual published by the American Psychiatric Association in 1983.

The goals of the publication were to produce a document that reflected the best concepts of the time, enhanced understanding of disorders, and improved treatment (Gruenberg, Goldstein, & Pincus, 2005). Better understanding of the disorders included an effort to increase inter-rater reliability and improve psychiatry's standing within the medical field (Horwitz, 2002). DSM-III is widely acknowledged to have brought a radical change to how psychiatric diagnosis is made. It moved away from trying to identify the etiology of diseases and instead emphasized an atheoretical application of explicit diagnostic criteria (Rogler, 1997). This was done because the field of psychiatry was under attack, accused of not being scientific enough to be taken seriously by other medical fields. Previous studies suggested that definitions and classification schemes used prior to DSM-III resulted in very little consistency and agreement on diagnosis among clinicians. It is universally agreed that the publication of DSM-III had a monumental impact on the field of psychiatry. Gerald Klerman, a high-ranking psychiatrist in the federal government at the time DSM-III was published stated,

“The development of DSM-III represents a fateful point in the history of the American psychiatric profession... The decision of the APA first to Develop DSM-III and then to promulgate its use represents a significant

reaffirmation on the part of American psychiatry to its medical identity and its commitment to scientific medicine” (Klerman, 1984).

At this time in psychiatry’s history, there were two camps of practitioners: those who took a psychodynamic orientation to mental illness (this was the primary orientation of the field) and those who favored a neo-Kraepelin, or more categorical, approach.

Dynamic theories of psychiatry did not pay particular attention to specific diagnoses and they believed that symptoms were disguises for a few fundamental problems. These practitioners did not spend much time assessing the presence of symptoms, as they were more focused on identifying the underlying root causes of the problems, and felt that once that issue was identified the symptoms would resolve themselves (Horwitz, 2002).

Robert Spitzer, the chairman of the task force assigned to revise the DSM, was part of the smaller group of practitioners who favored using explicit diagnostic categories. Spitzer led the effort to implement the changes reflected in DSM-III as a response to the medical community’s critique of psychiatry’s lack of diagnostic reliability and validity.

Reliability in psychiatry is defined as the extent to which clinicians agree on which diagnoses apply to which cases. If every practitioner uses the same criteria to diagnose a patient and they all arrive at the same diagnosis, then the criteria they are using are judged reliable. Validity, on the other hand, requires that the symptoms included in the diagnostic criteria are a true representation of what is being assessed or measured.

Namely, that the criteria themselves are, in fact, the “correct” criteria. The task force in charge of writing DSM-III evaluated the efforts it would take to address these two problems and decided to focus on making criteria that were reliable and essentially ignored the validity issue (Kirk & Kutchins, 1992). This was accomplished by

establishing diagnostic criteria that all psychiatrists could apply in the same way in order to arrive at a diagnosis.

This decision left the DSM open to two critiques. First, it reduced disorders to the presence or absence of symptoms, allowing a diagnosis regardless of the context of why these symptoms were occurring in the patient's life. Second, while the criteria were declared reliable through the field trials conducted before DSM-III's publication, no one ever claimed that they were valid. There were no field trials at the time of the DSM-III that had as their purpose establishing that the symptoms being included in a diagnosis fully encompassed the disorder being defined (Kirk, 1992). The introduction to the DSM-III, states that there was a lack of validity in the diagnostic criteria:

“DSM-III provides specific diagnostic criteria as guides for making each diagnosis since such criteria enhance inter-judge reliability. It should be understood, however, that for most of the categories, the diagnostic criteria are based on clinical judgment, and have not yet been fully validated by data ... Undoubtedly, with further study the criteria for many of the categories will be revised” (APA, 1981).

This turned out to be true (Kirk & Kutchins, 1992). Improving validity is one of the reasons that revisions to the DSM are constantly being proposed and it is these revisions that have contributed to its almost exponential growth over the years.

With respect to men, the depression criteria might not be valid because the symptoms that were included might be ignoring the context of men's lives. Many men have internalized hegemonic masculinity ideals during their development that will not allow them to disclose the symptoms included in the current diagnostic criteria. If research continues to rely on the current list of symptoms in the depression criteria then men will continue to underreport their depression. Instead, the criteria should be

modified in two ways. First, it should include symptoms that men are willing to disclose, such as substance use, anger and irritability, and risk-taking behaviors. Second, the questions assessing the current symptoms could be reworded in a way that would increase the likelihood of men's endorsement.

In conclusion, the DSM is an imperfect document that is always seeking to improve and refine its diagnostic categories. The DSM is currently undergoing another revision with DSM-V expected in May 2012. The work group assigned to review and revise the Mood Disorders (which includes depression) has reported that they are reviewing data on symptoms to see if there is evidence supporting the addition or removal of the current symptoms (Fawcett, 2009). As stated in Chapter One, the American Psychological Association's website suggests that men experience depression in a different way and lists symptoms that are not included in the current definition. Hopefully some of the symptoms and studies that the Mood Disorder workgroup are reviewing address this gap. The next section reviews the recent body of literature put forth by clinicians who claim that depression in men is different.

REVIEW OF CLINICAL AND POPULAR LITERATURE

Messages about men and depression are gaining popularity in a variety of settings. The previous section mentioned several alternative symptoms that could be looked for to identify depression in men. This list of symptoms comes from several books that have been published by clinicians interested in bringing to light the idea of an atypical expression of depression in men. The intended audience includes the public, other clinicians, and researchers. Three academically published books include *New Psychotherapy for Men* (1998) edited by Pollack and Levant, Cochran and Rabinowitz's

Men and Depression – Clinical and Empirical Perspectives (2000), and Dariusz Gaslasinski's *Men's Discourses of Depression* (2008). These books rely heavily on the citation of peer-reviewed published studies combined with their clinical and personal experiences of men with depression. The books published for more popular audiences include Lynch and Kilmartin's *The Pain Behind The Mask: Overcoming Masculine Depression* (1999), Archibald Hart's *Unmasking Male Depression – Recognizing the Root Causes To Many Problem Behaviors, Such As Anger, Resentment, Abusiveness, Silence, Addictions, and Sexual Compulsions* (Hart, 2001), Terrence Real's *I Don't Want to Talk About It – Overcoming the Secret Legacy of Male Depression* (1998), Jed Diamond's *The Irritable Male Syndrome – Understanding and Managing the Key Causes of Depression and Aggression* (2005), and Martin Kantor's *Lifting The Weight – Understanding Depression in Men, Its Causes and Solutions* (2007). The authors of these books are all clinicians. The legitimacy of their arguments rests on their claims of clinical expertise. This expertise is presented in the form of citing specific case examples from their practice as well as personal narratives of their own experiences with depression. From the titles of these books, it is clear that male depression is something new, secretive, and something that needs light shed upon it. Common among the titles are words describing the burden of depression in men (pain, overcoming, managing, lifting the weight), the secretive nature of depression in men (mask, root causes, silence, secret), and all of the books mentioned make clear that the subject matter is not depression, but depression in *men*.

Much of the material discussed in these books is similar. They all begin by declaring that the published rates of depression are underreporting men's depression and

that this is cause for alarm. Driving their argument is some review of empirical studies (especially the data on the overrepresentation of men in suicide cases and men's history of underreporting symptoms), a discussion of clinician bias (as seen in both the literature and personal experience from their own training), and the fact that they identify a gap between the published numbers and their own clinical experiences. The clinicians all acknowledge that they were taught that depression was a disease more commonly seen in women and this introduces bias into the clinical assessment. They say that the men who come into their offices with depression rarely begin discussing their problems in the language of depression as it is currently described in the DSM or as they were taught in school. Through their years of clinical experience, these clinicians have learned to recognize depression in men even when it does not present like typical depression because they have learned to identify the masking behaviors and alternative symptoms seen in depressed men.

The premise of these books is built upon the authors' clinical expertise in treating depressed men. The books include descriptions of clinical experiences and composites of patients who have suffered from depression, but presented atypically. The main finding summarized across these works is that the clinician who only looks at classic symptoms of depression will miss it in their male patients, as men often mask or hide their depressive symptoms. Cochran and Rabinowitz state that when assessing men for depression the clinician should look beyond the presence or absence of traditional symptoms. Masking of depression might appear through the use of mood-altering substances (alcohol and/or drugs), over-involvement in work, sexual conquests, gambling, or other high-risk behavior (Cochran & Rabinowitz, 2000).

This work states that when men experience emotional pain they are more likely to react with anger, self-destructiveness through acting out and engaging in high risk behaviors, distracting themselves or numbing the pain through substance use, gambling, womanizing, and workaholism (Lynch & Kilmartin, 1999). The authors cite two reasons to explain why these behaviors are actually masked presentations of depression. First, they adopt the argument proposed earlier in this chapter that our society's norms of masculinity restrict men's ability to admit to feeling depressed. This negatively influences a clinical diagnosis if the clinician relies on traditional questionnaires. Second, they find that through the treatment process, as the patients build rapport and trust, they are eventually able to have them acknowledge the more traditional depression symptoms. Clinician, Terrence Real states that this initial presentation is a way of protecting the man's self-image, and "once he is broken-down a little in therapy" they are able to identify that the root of this problems is depression (Real, 1998).

In his book, Martin Kantor, M.D., states that if a clinician asks a man about symptoms such as feeling down, depressed, or hopeless, "a man, who was depressed, might see the question as a blaming attack on him and as threatening to his macho self-image. So, he might answer 'no' just to maintain his positive self-view" (Kantor, 2007). Terrence Real states that it is his clinical experience and success at treating these men that "convinced me that many of the difficult behaviors one sees in men's relationships are depression driven" (Real, 1998).

The majority of these authors do not use rigorous research methods or data to support their claims. Instead, they propose their theory of depression, cite several of each other's books, and then present a case example that illustrates their points. They do not

give a comprehensive sense of how many cases they have treated over the years or how representative their case presentations are, although they do state that the cases presented in the book are composites of real cases they have treated over the years. What each of them does have is more than 20 years of clinical experience treating depressed men. Taken alone, each author's experience would be impressive and make him a voice worth listening to. However, what is quite striking is the fact they all tell very similar stories. The clinicians identify the same behaviors and symptoms and provide support for each other's statements, which increases their credibility. Therefore, when these authors claim that continuing to focus only on the current diagnostic criteria will cause underdetection of depression in men, it is a claim worth investigating empirically. Until the issue has been thoroughly investigated with empirical data, however, the foundation for a different depression in men rests on shaky ground.

This literature proposes that men are much more likely to express their emotional and psychological distress in the form of "depressive equivalents." These actions constitute an indirect expression of depression because direct admittance of sadness and emotional weakness or vulnerability in men is seen as unacceptable. Instead of a confession of dysphoria, the signal that something is wrong is a change in the man's behavior. Instead of a man becoming weepy or sad, he becomes irritable or he develops somatic symptoms such as back pain. Instead of being shy there is now attention-seeking behavior. The man is more likely to take his feeling of shame and worthlessness that he feels about himself and project them onto others, often lashing out at the people closest to him (Kantor, 2007).

Jed Diamond's book is slightly different from the other popular literature because he attempts to provide documented evidence beyond his clinical experiences. He developed his Male Depression Questionnaire after years of clinical practice and a review of the empirical literature. He then posted it on a popular men's health website to gather data. He hired Courtney Johnson, who holds a Ph.D. in both statistics and psychology from Duke University to analyze the data gathered from the online questionnaire. While these actions provide some credibility to his claims, there are several limitations as well. The analysis methods are not reported in the book. The results are reported, but do not include the standard errors or definitions of significance (e.g., confidence intervals or p-value cut-offs), and the results were never subjected to peer-review. The study was planned after the contract for his book was already signed (Diamond, 2005). Therefore, while the results of his survey do provide evidence and are summarized later in this chapter, the exact analysis and methods cannot be evaluated.

In his book, Diamond quotes Laura Young, Ph.D., senior vice president of the National Mental Health Association, who says of men's experience of depression, "it is more likely to appear as a loss of concentration, anger outbursts, withdrawal, and sleep disruption." The men who describe these symptoms do not identify them as being experiences of depression. Rather, in their minds, the underlying problem is stress. For these men, using the term stress is "safe" because it is a reaction to normal life events and circumstances. No one's manhood is challenged by admitting to being stressed.

Depression, on the other hand, is a mental illness, indicating that something is wrong with the man himself. There is no shame in having stress-related problems, as there would be in having depression. By keeping the language focused on stress men are

also less likely to categorize being stressed as something worthy of seeking medical or psychological treatment. If asked, most people would readily admit that stress is a part of everyone's normal life experiences and that managing stress is something people are expected to do without having to seek professional help. Instead, they may see stress as a constant in their lives, always present, with very limited hope for change. Attributing their problems to stress instead of depression would probably not impede a clinician's diagnosis of depression. However, because most people accept that stress is a normal part of life and not a medical condition, depressed men who identify stress as the cause of their problem may be less likely to seek help.

According to the books, depressed men who are in treatment rarely used the term depression during their first visit to the clinician's office. They often arrive in the clinician's office because of substance use problems, marital problems, or job performance issues. Often it is the behavioral changes that are visible in men that land them in the clinician's office rather than recognition that they are depressed. According to Cochran and Rabinowitz, "many men need a 'problem' often imposed externally, to sanction a first visit to a therapist." These men may have been slightly coerced into going to see a therapist because the "patient's behavior has exceeded the limits that important persons in his environment, such as a spouse or an employer, are willing to tolerate" (Cochran & Rabinowitz, 2000).

Rather, than walking into the therapist's office and talking about their own motivations for needing help, men say that they are experiencing too much stress, not depression. Doing so keeps the discussion in more active terms, identifying external sources of stress, rather than having to discuss internalizing emotional issues. It may be

very effective for clinicians and researchers to keep this language difference in mind when trying to evaluate and treat men for depression.

First, clinicians need to be willing to look for depression in men and be aware that it may present differently than depression in women. Second, clinicians who treat depressed men should be mindful of the language they use and what questions they ask. Clinicians should allow the conversation to unfold in language the patient is comfortable with to build rapport and trust. Although the clinician may be able to identify the man as depressed, it may not be productive to share that information until the patient is ready to accept it (Kantor, 2007). Part of the process of being more open to detecting depression in men it is important to acknowledge that the driving forces of men's depression are quite different from those identified by women. Whereas women often seek help for relationship-related issues, depressed men will instead present with achievement-related issues rather than dysphoric mood. Kantor (2007) summarizes the atypical symptoms that depressed men will express, including:

- Emotionally based somatic complaints
- Alcohol and drug abuse
- Irritability and anger (perhaps associated with a domestic relationship)
- Action-oriented symptoms (e.g. agitation, moaning, wiling, and hand-wringing)
- Terrence Real's "failures in intimacy" (such as a fear of commitment or interpersonal distancing)
- Occupational disorders leading to job problems, or problems related to the failure of advancement

Diamond believes that one of the most powerful detriments to men suffering depression is the active denial that they have regarding their problems. He states that one of the primary symptoms is the lack of recognition that there is problem within in the man, often the men see everyone else around them as the source of the problem. The

depression exists beyond the man's awareness. Either he does not believe that anything is wrong, he finds ways to blame his problems on someone else, he masks the problems through actions (over-working, over-exercising, using substances), or he continually expresses anger and blame towards others. Diamond reached these conclusions after confronting his own personal experience with depression. For years he suffered from anger attacks and reduced stress tolerance. When his wife tried to broach the possibility that he might be experiencing depression he denied it for years, because his symptoms did not fit the DSM criteria and he had been trained that depression was not a common ailment of men. It took many years for him to be willing to acknowledge that he was depressed and to seek treatment to deal with that depression. As a result of this experience he wanted to reach out to other men and their families to try and raise awareness of the different ways men experience depression (Diamond, 2005).

Overall, these books present a starting point for mental health researchers who are interested in further exploring the themes and evidence presented through the case studies and years of summative clinical experience. These books have done much to raise awareness about the challenges of identifying depression in men. Not only is the presence of a mental disorder stigmatizing in this country, but too often it is seen as an emotional vulnerability that is simply unacceptable and contrary to masculinity. Men cannot admit the presence of this emasculating condition and this denial or masking of the problems prevents any solutions from being explored. However, while much of what has been written about men and depression over the last ten years is plausible, rigorous empirical testing is needed to assess the credibility of these ideas. The next step is to

expand the clinical knowledge into the research base and for this empirical work to evaluate the clinical hypotheses.

REVIEW OF EMPIRICAL EVIDENCE

To date there has been no single large-scale community survey conducted that includes alternate depression presentations that describe the clinical expressions as stated in the previous section. However, several smaller studies have looked at men and depression. The empirical work reviewed in the rest of the chapter includes research reporting sex differences in prevalence rates of depression, studies involving alternative measures designed to assess male depression, and the suicide paradox.

One of the largest pieces of evidence that men are underdiagnosed with depression comes from an examination of suicide rates. According to World Health Organization Data from 1995-1996, male suicides outnumber female suicides in every country except for China (Hunt, Sweeting, Keoghan, & Platt, 2006). These data are also marked by a growing divergence between male and female suicides, a gap that has been steadily growing since the 1970's. This divergence is bidirectional, with a decrease in the female suicide rate and increase in the male suicide rate. The depression-suicide gender paradox is this: women are more likely to be diagnosed with depression, and to attempt suicide, while men are less likely to be diagnosed with depression, but more likely to die from suicide attempts.

Most suicide researchers agree that suicide is linked to depression. At least 50% of suicides occur during and as a result of a depressive episode. In Western societies, the male to female ratio of completed suicides is two to one, and in the United States, it is as high as six to one (Möller-Leimkühler, 2003). If it is known that depression plays a large

role in suicide and it is also known that men are killing themselves at an alarming rate, why is it unknown that these men are depressed? If they were correctly diagnosed with depression then it would also be known that they were at increased risk for suicide and interventions to prevent male suicide might be able to be put in place. Suicide is the ultimate expression of hopelessness and men are adept at killing themselves (Rutz, 1999). Society has conditioned men to be dissociated from their feelings and unable to express their emotional pain that when they become overwhelmed they decide to take their own lives instead of reaching out for help. It is a last desperate act of regaining self-control to try to manage their feelings of hopelessness. Untreated depression has deadly consequences and illustrates exactly what is at stake if the diagnostic criteria and measurement tools remain inaccurate and inadequate at assessing depression in men.

The disparity in suicide rates is not the only clue available in the empirical data where one can look for evidence of how culture affects men's experiences of depression. If hegemonic ideals of masculinity cause men to underreport, mask, or not recognize their depressive symptoms, one might expect the sex differences in depression prevalence to disappear in populations in which this type of masculinity is not adopted. Several studies have been conducted that provide supportive evidence of this hypothesis. Egeland and colleagues found no sex differences in the prevalence of depression among male and female in an Amish population. The explanation for this finding was that in the Amish community, male depression is not masked by alcoholism and antisocial behavior because the community does not endorse such behaviors (Egeland, Hostetter, & Eshleman, 1983). The Amish are considered a tight-knit community who value humility and reject actions of pride, arrogance, and individualism. They put a greater focus on

community over individuality, which is quite different from the view hegemonic masculinity purports. Although this study was on a very small population, it clearly demonstrates the effects that culture and society have in the expression of depression symptoms.

A second study that shows similar results was conducted with Chinese Americans. Takeuchi and colleagues conducted one of the first studies of Chinese Americans in the mid-1990s (Takeuchi et al., 1998). The authors investigated the prevalence of both MDD and dysthymia and found no relationship between sex and prevalence rates. This surprised the authors because they had expected more Chinese women to meet criteria for MDD than men, as is found in most depression studies. The authors went a step further to investigate whether acculturation influenced the depression rates. By constructing a measure of acculturation and splitting the sample into two groups at the acculturation median, Takeuchi et al. found that women in the high acculturation group were 2.16 times more likely to meet depression criteria than men in the same group, while in the low acculturation group there were no differences between men and women (Takeuchi et al., 1998). The authors proposed that the women in the non-accultured group might have been protected from depression. However, their results can be interpreted in a slightly different way if one considers that the men who were not acculturated reported more depression than their counterparts who identified with more typical American values, including hegemonic masculinity.

The third and final group to consider is gay men. Again, as with masculinity in general, there is no such entity as a single gay identity. However, gay men are stereotypically considered to be more open and in touch with their emotions than

heterosexual men. One could therefore hypothesize that gay men would report higher incidence of depression than heterosexual men. A study by Mills et al. (2004) assessed depression prevalence among gay men. Depression was assessed using the Center for Epidemiological Studies Depression Scale (CES-D Scale). The CES-D Scale, originally developed in 1977 as a survey instrument for measuring depression, is a 20-item questionnaire asking the frequency of depressive symptoms experienced in the previous week. The authors found that gay men had a depression prevalence of 17% using the CESD cutoff score of 22. This is well above prevalence rates of a national sample of men and the authors propose that it is part of being a stigmatized minority group in America. However, an alternative explanation could be that these men are more likely to admit the presence of emotional problems and symptoms because it is not as threatening to their identity as a gay male.

Taken together these three studies demonstrate that culture influences men's experiences of depression. Therefore, it is plausible that hegemonic masculinity is also affecting men's experiences of depression by encouraging them to hide or mask their depressive symptoms. The next body of literature reviewed assesses the presence of alternative symptoms of depression among men.

The Gotland Male Depression Scale (GMDS) was the first measure designed to capture the alternative symptoms of men suffering from depression. The investigators were evaluating an educational intervention program aimed at improving general practitioner's ability to prevent, recognize, and treat depression on the Swedish island of Gotland during the mid 1980s (Rutz et al., 1995). The initial results of that evaluation demonstrated that the campaign was successful, as there was a statistically significant

reduction in the suicide rate. However, upon further investigation, they discovered that this reduction was purely the result of a decrease in the female suicide rate. The male suicide rate remained completely unaffected (Wålinder & Rutz, 2001). The authors speculated that depression among males might manifest in ways undetected by current diagnostic systems, which prevented the general practitioner from identifying the men who were depressed and at increased risk for suicide.

The article in which the authors describe the procedures used to construct the scale was never published in English. The first English publication on the GMDS appeared in 1999 and included a description of the Gotland suicide evidence and the GMDS items in a table (Rutz et al., 1995). In addition to traditional depression symptoms, the GMDS includes items assessing irritability, aggressiveness, acting-out behaviors, reduced impulse control, lowered stress tolerance, and higher substance abuse (Zierau, Bille, Wolfgang Rutz, & Bech, 2002). It contains 13 items which are rated on a four-point scale ranging from not present (0) to present to a high degree (3). The total scores can range from 0 to 39, with a score of 0 – 12 indicating no depression; 13 – 26 indicating probable depression; and 27 – 39 indicating definite depression. The scale was validated using a sample of men currently in treatment for substance dependence. The participants completed three self-report measures, the GMDS, the Major Depression Inventory (which assesses depression using the DSM-IV criteria), and the WHO (Five) Well-Being Scale.

The purpose of this study was to validate the GMDS by demonstrating its internal consistency and external validity by exploring its correlation with an existing depression scale, Major Depression Inventory (MDI), an established measure of depression. The

Major Depression Inventory classified 17% (N=15) of the sample as having major depression. The GMDS classified an additional 22% (N = 39) of the men as depressed. Regarding internal validity, the GMDS had a Cronbach alpha of 0.86 (acceptable coefficients range from 0.7 – 0.9), and this was on par with the internal consistency of the MDI (0.85). The GMDS was also positively correlated with the MDI (0.77), as would be expected if the scales were measuring related constructs.

While the GMDS is widely cited and used, some researchers have argued that there are methodological concerns that may limit its usefulness (Magovcevic & Addis, 2008). These limitations include the fact that it was validated using a small sample (89) and the fact that study only included males, so there is little evidence that the scale itself is a better predictor of depression in men only. The individual items that make up the scale are often quite wordy, which can be confusing. Several items are double-barreled asking about more than one construct. For example, item nine from the GMDS states, “Overconsumption of alcohol and pills in order to achieve a calming and relaxing effect. Being hyperactive or blowing off steam while working hard and restlessly, jogging, or other exercises, under or over-eating.” This single item includes an assessment of at least five separate constructs – substance use, hyperactivity, working hard or restlessly, over-exercising, and changes in appetite. Combining these items into a single question is not good practice and doing so threatens the reliability of the overall measure. Therefore, while this study is important to the field because it is the first to propose a male depression scale that contains the alternative symptoms suggested by the clinical and popular literature it does not provide definitive proof that these are the definitive items that should be used for detecting depression in men.

Moller-Leimkuhler, Bottlender, Strass, and Rutz (2004a) used the Gotland Male Depression Scale with an inpatient population (2,411 participants; 656 males and 1,755 females) to see if the scale could differentiate between male and female in patients with depression. The authors found no differences in the frequency of endorsement for the items, nor did the mean scores differ between male and females. In addition, the researchers conducted three sets of factor analyses, the first on the total sample, then one including male subjects and one for female subjects. All three factor analyses resulted in a five factor solution. For the females, the typical depression symptoms that loaded on the first two factors included tiredness, loss of vitality, sleep problems, depressed mood, complaintiveness, and restlessness. For males, the first two factors were comprised of mainly atypical symptoms including: abusive behavior, irritability, antisocial behavior, and aggressiveness. Therefore, while the overall findings were inconsistent with the original hypothesis, there was some evidence of the male atypical expression of depression. These findings did not identify a male-specific form of depression because there were no sex differences in the mean scores. However, this scale does contain items that men are more likely to endorse than traditional measures of depression and when these alternative symptoms are included, the measure identified equal prevalence rates of depression for both men and women.

The third and final study that is related to the Gotland Male Depression Scale was Jed Diamond's Male Depression Questionnaire (Diamond, 2005). The questionnaire was posted on the popular men's magazine *Men's Health* website and invited men (and women who believed that their partner might be depressed) to answer the survey. Altogether, 9,453 people completed the survey. There were 50 items derived from Jed

Diamond's clinical expertise and other research, including the Gotland Male Depression Scale. Responses were on a four-point scale ranging from: Not at all (0) to Most of the time (3), with scores going from 0 – 150. It is scored as follows: a score of 0 – 25 indicates no signs of depression; scores of 26 – 49 indicate possible depression; scores of 50 – 75 indicate that depression is likely present and should consider seeking help; and a score 76 or higher indicates that depression is definitely present and getting professional help is important. Diamond gives very little description of how he arrived at the cutoffs, only stating that he, “developed the following results based on my own clinical experience with people who took the questionnaire and from the 9,453 people who took [it] on the *Men's Health* magazine website” (Diamond, 2005). Based on the results of his survey (which have not been published in a peer-reviewed journal nor presented his book) he developed the short version (15 questions) that he claims predicts depression in men. One is left to infer what he means by saying these questions predict depression in men. He does not give any analytic methods or results that were gleaned from the almost 10,000 responses he collected.

Diamond went a step further than his colleagues who also published books on male depression by attempting to collect data to support his argument. However, his research methods are unorthodox in that they are a mixture of self-report and indirect observation. When he posted the survey on the *Men's Health* website, he allowed men to answer the questions for themselves (self-report), but also allowed other people, such as spouses or partners to answer the questions about the men in their lives. Ultimately, the questions and their cut-off scores are not validated by any current research methods. They seem to be included in his text solely as a means for personal use, for a man who

suspects he might be depressed to assess his own condition, but it is highly questionable what those results actually mean. Diamond provides no demographic information about his sample, not even identifying the number of people who fell into the two types of observation (self-report or observation). He also does not report whether these two samples resulted in similar or different findings. The results make no mention of prevalence rates, significance levels, percent endorsement, or any validation of his measure with any other measures of depression, leaving the questionnaire unhelpful to researchers.

A second measure designed to identify a male-type of depression is the Masculine Depression Scale (MDS), developed by Magovcevic and Addis (2008). The MDS is a self-report scale designed to capture the alternative male symptoms of depression proposed by the literature. The MDS underwent a transparent and scientifically rigorous development process. First, the two authors independently reviewed the literature and created lists of proposed symptoms. These lists were compared and 16 final symptom areas were identified and included in the MDS: (1) anger, aggression, irritability; (2) substance abuse; (3) withdrawal from family/social interactions; (4) over-focus on work/school; (5) blunting of affect; (6) inability or unwillingness to experience/express soft emotions; (7) loss of interest in succeeding; (8) aches and pains; (9) change in sexual desire; (10) stress intolerance; (11) difficulty with decision making; (12) need for autonomy/self-reliance; (13) worries about future; (14) self-criticism/sense of failure/ineffectualness; (15) externalizing/blaming; and (16) burden/disillusionment. Specific items were then developed for each symptom, resulting in an initial pool of 64 items (Magovcevic & Addis, 2008). The resulting items were then reviewed by a group

of graduate students who were part of the research team developing the MDS. After their review several items were reworded and several new items were added to the scale based upon their recommendations. At this point, the items were sent to five experts for review. These experts were chosen for their work and publications on men and depression or for having a reputation as a clinician particularly skilled in working with depressed men. Each expert was asked to rate the items for how characteristic they were of depressed men using a scale of 1 (not at all characteristic) to 4 (very characteristic). The ratings of each expert were averaged together to give each item a final average score. Those items with an average score of 3 or higher were included in the final version of the MDS which contains 58-items.

The authors examined the psychometric properties of the MDS using a sample of 102 men who were at risk for depression. A man was considered to be at risk for depression if he had experienced a recent stressful life event within the last three months. Half of the participants were recruited at the YMCA of the Greater Boston Area and half were currently seeking mental health treatment at a community health center and were recruited by their provider or the study Principal Investigators. The participants completed self-report measures assessing traditional depression, conformity to masculine norms, and the author's newly created measure of masculine depression. The measures used included the Beck Depression Inventory (BDI) and the Conformity to Masculine Norms Inventory (CMNI), a self-report inventory that assesses the extent to which men conform to masculine norms (Mahalik et al., 2003). Factor analysis of the MDS resulted in a two factor solution, one representing internalizing symptoms, and one consisting of externalizing symptoms. The externalizing symptoms were moderately correlated with

measures of depression and masculine norm adherence. The internalizing symptoms were strongly correlated with traditional depression, but were unrelated to masculine norm adherence. Regarding symptom endorsement, men who strongly adhered to masculine norms reported more externalizing symptoms than internalizing symptoms.

The results of this study are important for two reasons. First, the MDS did find evidence of an alternative masculine assessment of depression. Men who scored high on masculine norms adherence were equally likely to endorse internalizing and externalizing MDS items, but were less likely to endorse traditional depression items, as measured by the BDI. In order to make men more comfortable with endorsing these items, the questions were stated in a way that did not threaten the men or make them feel more vulnerable. For example, when assessing uncertainty or difficulty making decisions, traditional measures of depression often ask, “Were you unable to make up your mind about things you ordinarily have no trouble deciding about?” Hegemonic masculinity ideals demand that men be decisive and confident. The above question asks a man to admit indecisiveness which is a stereotypically feminine trait. However, indecisiveness can still be assessed in men, if the phrasing of the item is changed. In the MDS, the item is worded, “I don’t feel as confident about my decisions.” This allows a man to evaluate the quality of his decisions rather than his ability to make a decision. The second important finding from this study is the link between masculinity and the externalizing alternative depression items. The authors were able to demonstrate that masculinity, rather than sex, was an important predictor of reporting externalizing symptoms.

The study also contained several limitations. First, the authors deliberately chose to examine the psychometric properties of their scale with a sample exclusively made up

of men. They felt that in order to truly define a masculine-type of depression they should only assess men. However, the authors do themselves a disservice by not including women in their sample. They included measures of masculinity and gender role conformity to examine if it was in fact a relationship between masculinity that would lead men to endorse these alternative symptoms, and not simply sex. Including women and measuring their gender role conformity would have allowed the authors to present a more nuanced argument. They would have been able to investigate if there are women who present with a masculine-type depression. It is highly probable that some women would meet this masculine-depression profile. If the authors wish to identify items that seek to make the current measurement of depression more valid they should have included a sample of both men and women.

A second limitation is that the study did not attempt to identify cases of depressed men with their measure. The authors investigated the psychometric properties of the scale, and reported the mean scores of all measures used, but they did not provide any guidelines on how the scale scores should be interpreted. A third limitation of the MDS is that several of its symptoms seem to be measuring aspects of masculinity rather than symptoms. For example, “need for autonomy/self-reliance” is often included as an example of values ascribed to hegemonic masculinity. It may be that many men who are not depressed would endorse such an item. Two of the criteria for assessing depression are that: (1) there has to be a change in behavior and (2) that the symptoms are causing the person significant impairment in their daily lives. Stating that one is self-reliant or values autonomy does not automatically make them impaired and it could very well be a stable trait that the person has always exhibited rather than a recent change. However, if

a person determined that their need for autonomy limited their ability to acknowledge a problem such as depression, then it may be considered a symptom. Items that seek to measure the alternative expression of depression in men need to be carefully worded to avoid this situation.

There is a second class of studies that have investigated the presence of alternative symptoms in depressed men. These studies identify cases of depression using traditional measures and then assess the presence of alternative symptoms among those cases. Shiels and colleagues (2004) examined depression rates among men living in a rural part of the United Kingdom. The authors were concerned that primary care physicians were less likely to diagnose men with depression than women. They asked the men to complete a self-report measure of depression in addition to undergoing a clinical assessment by a general practitioner. The self-report measure used was the Hospital Anxiety and Depression Scale (HADS). The HADS depression subscale is a 7-item self-report measure that has been validated and used to identify depression cases in somatic, psychiatric, and primary care patients (Shiels et al., 2004). The maximum score on the scale is 24, and a cut-off score of 8 is generally used to identify depression cases. In the study, depressed men were significantly more likely to report being very tired, having no energy, and not enjoying their work compared to men without depression. Men were also much more likely to be identified as a depression case by their score on the self-report measure than from clinical diagnosis. The prevalence of depression using the HADS scores was 14%, while the physicians identified only 5% of the men as depressed. The self-report measure distinguished more depression cases than clinical

observation by the general practitioners. This finding supports the notion that clinicians are who are not trained to look for depression in men will be likely to underdetect it.

Winkler, Pjrek, and Kasper (2005) conducted a study in 217 depressed patients (104 females, 113 males) to investigate whether anger, irritability, and aggression play a role in the symptomology of depression. The patients in this study were diagnosed with Major Depressive Disorder by a clinician and treated in an inpatient unit at the Department of General Psychiatry at the University of Vienna between 2000 and 2002. They found that male patients scored significantly higher on irritability, were more prone to overreact to minor annoyances, suffered from anger attacks (sudden spells of anger and aggression with physical features similar to panic attacks), had lower impulse control, showed more substance use intake, and hyperactive behavior compared to the female patients.

Newman, Fuqua, Gray, and Simpson conducted a study that investigated the relationship between anger and depression (2006). The study used two validated measures to assess depression and anger: the Beck Depression Index (BDI), which is one of the most widely used self-report depression measures (Beck, et al., 1961), and the State Trait Anger Expression Inventory (STAXI) (Spielberger, et al., 1983). The sample consisted of 134 people (65 men and 74 women) who were seeking mental health services at a clinic in the southwestern United States. The researchers did not limit the sample by requiring the presence of any specific diagnoses or symptoms. The authors found no gender differences in either the mean scores of the anger scales or depression scores. The study found that all five components of anger were significantly correlated

with depression. A hierarchical regression analysis revealed that 38% of the variance of depression was explained by the five anger scales.

The study found a significant relationship between depression and the presence of anger. However, the authors did not find support that this relationship was unique to men. Regardless of this, the authors still proposed that assessing anger as a depression symptom will have a greater impact on the diagnosis of men with depression than women. They state that although both sexes may experience anger at similar rates, women may be more likely to present classic depression symptoms to a clinician, while men may be more likely to present anger and frustration. They speculate that anger may be a more natural expression of psychological distress among men than depression. Moreover, men may not even be aware of their underlying depression, but is more readily aware of his anger and willing to report that. The authors' statements are based on findings from gender role studies that propose men are more likely to express anger than classic depression symptoms such as hopelessness or crying, rather than any of their own empirical findings.

The idea that men's relationship with anger and depression will be more important in making a clinical diagnosis makes intuitive sense, but to date there have been mixed results from empirical studies. Winkler et al. found that men with depression scored higher on irritability and had more anger attacks, while Newman et al. found similar relationships between depression and anger for men and women. Further study is needed in this area before any definitive conclusions can be drawn.

In a focus group study done in Australia, Brownhill and colleagues (2002), found that men remain silent about depression, expecting doctors to be able to "pick up on it"

without them having to report it, and identified work and family as the two areas that “cause” depression in men. They also stated that if they were asked directly about their depression by a doctor they would likely remain silent, not wanting to answer those questions. This finding in the qualitative literature is important evidence suggesting that clinicians and physicians cannot rely on male self-report in the same way they can for female self-report when assessing depression prevalence. This research suggests that perhaps a better way to assess depression in men is by asking questions related to work and family rather than depression only.

CONCLUSION

This chapter explored the relationship between men, masculinity, and depression. Namely, it attempted to identify the reasons why researchers may be failing to detect depression in men. Due to the fact that the diagnostic criteria for all mental disorders are shaped by social forces as much, if not more than by empirical evidence, the meaning of depression has changed over time. Traditionally, men’s experience and reactions to illness have been considered the standard. It is only recently that research is examining the link between masculinity and health. Hegemonic masculinity values self-determination, control over emotions, and other aspects of life, strength, and stoicism. These values are at odds with admitting emotional distress and leave men unable to admit to or recognize their own depression. Research is needed that considers alternative expressions of depression in men. These include social withdrawal, increased irritability, aggression, and anger, functional impairment in relationships and employment, somatically based emotional complaints, and physical agitation. The literature is quite clear and comprehensive in its description of what depression looks like in men.

However, current diagnostic measures and criteria have failed to consider these alternative symptoms. It is time to re-evaluate our current measures to reflect the way men experience depression. The next two chapters evaluate existing data for alternate signs of depression in men. Chapter Three investigates the construct of irritability and its place in the depression diagnostic criteria. Chapter Four constructs two scales designed to identify what happens to the difference in male and female depression rates when the criteria are expanded to include symptoms proposed by the literature to assess men's experiences of depression.

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Chapter 3: IRRITABLE DEPRESSION

INTRODUCTION

As illustrated in the previous chapter, the meaning, definition, and diagnostic criteria of depression has changed over the years. Irritability is one symptom that has moved around more than most and is today once again the subject of debate among researchers. In the DSM, the importance of irritability as a symptom for depression has ranged from being a possible core symptom of Major Depressive Disorder to not appearing in the official criteria at all. In today's diagnostic criteria, irritability can be assessed as a symptom of dysphoric mood in children and adolescents, but not adults. However, recent studies have shown that irritability is important in diagnosing depression and suggest that it should be considered in adult diagnosis (Fava et al., 2009). Irritability has been studied in several mental disorders including: Major Depressive Episode, hypomania, bi-polar depression (I and II), and borderline personality disorder. The terminology surrounding irritability can be confusing as it is so closely related to anger and has never been satisfactorily described in the psychological literature (Snaith & Taylor, 1985). A number of studies try to differentiate between irritability and anger while others state that they are the same construct. Some common terminology addressing irritability often includes references to hostility, anger, and aggression with few attempts made to differentiate between these terms (Benazzi & Akiskal, 2005; Perlis et al., 2005; Snaith & Taylor, 1985). Snaith and Taylor (1985) were the first to propose a

definition of irritability regarding its use in psychopathology, “Irritability is a feeling state characterized by reduced control over temper which usually results in irascible verbal or behavioral outbursts, although the mood may be present without observed manifestation. It may be experienced as brief episodes, in particular circumstances, or it may be prolonged and generalized. The experience of irritability is always unpleasant for the individual and overt manifestation lacks the cathartic effect of justified outbursts of anger.” More recent research investigating the presence of irritability in depressive symptoms have adopted the following definition, “a persistent state of anger, a tendency to respond to events with angry outbursts or blaming others, or an exaggerated sense of frustration over minor matters” (Benazzi & Akiskal, 2005; Benazzi, 2008; Winkler et al., 2005). These two definitions are similar and both state that irritability is a type of anger that leads to decreased control over one’s temper and makes the individual unpleasant to be around. In the current analysis, irritability was assessed by a single question, “Have you ever had a period lasting several days or longer when most of the time you were very irritable, grumpy, or in a bad mood?” The respondent was left to interpret the meaning of irritability and assess its presence in their lives on their own. The next section takes a closer look at the relationship between anger, gender, and depression.

RELATIONSHIP BETWEEN ANGER, GENDER, AND DEPRESSION

It has been proposed by several authors of popular books examining depression in men that irritability may be the way men express depressed mood. This literature suggests that if irritability were included in the diagnostic criteria it would narrow or eliminate the sex differences found in depression rates (Diamond, 2005). The relationship between anger, gender, and depression has been empirically studied over the

past 15 years. The theories born from this empirical work are grounded in gender role socialization. It is known that both men and women experience and express anger, but the literature proposes that the experience and function of anger are different, based on one's adherence to gender role normalization. Women are socialized to believe that the expression of anger is not feminine and should be avoided. On the other hand, expressing anger is one of the few emotions that are not at odds with masculinity (Newman et al., 2006). Kopper and Epperson studied the relationship between anger gender role socialization, and sex. The authors hypothesized that women would score higher on the anger suppression scale because the literature suggests that women have a more difficult expressing their anger than men. The authors found that gender role socialization (measures of femininity and masculinity) were highly correlated with specific anger profiles, but sex was not. For instance, femininity was negatively correlated with aggressive acting out and uncontrolled expression of anger and positively correlated with anger suppression. Masculinity was positively correlated with aggressive acting-out and uncontrolled anger expressed either verbally and indirectly. They also found that anger suppression was closely correlated with depression, anxiety, guilt, and conflict avoidance, and that it was negatively correlated with assertiveness and self-confidence. As a result of their study, the authors proposed that women's suppression of anger manifests itself in other negative affective experiences including depression, anxiety, and guilt (Kopper & Epperson, 1996). Newman et al. (2006) report that clinical observations have led to the suggestion that other painful or "less masculine" emotions will be expressed as anger by men, because it is the only socially sanctioned emotion available to them. Therefore, the literature suggests that women's negative affect

manifests as depression, while men's negative affect manifests as anger. It is this notion that fuels the research investigating irritability and anger as an expression of depression among men.

RELATIONSHIP BETWEEN IRRITABILITY AND DEPRESSION

As mentioned earlier, irritability has been a symptom of depression with differing importance over time and among different patient populations. The Feighner criteria (1972), on which the DSM-III diagnoses were partly based, included irritability as a characteristic of dysphoric mood. Specifically, the number one requirement for Depressive Disorder according to the Feighner criteria was dysphoric mood which could manifest itself as any of the following: "depressed, sad, despondent, hopeless, feeling 'down in the dumps,' irritable, fearful, worried, or discouraged" (Kirk & Kutchins, 1992). The final criteria for Major Depression within DSM-III also included irritability as a sign of dysphoric mood (APA, 1981). However, in the revision of DSM (DSM-III-R), irritability was removed from the dysphoric mood category, except for children and adolescents (American Psychiatric Association, 1987). Furthermore, there is no discussion in the revised text addressing why these changes occurred. Starting with DSM-III-R irritability was associated with manic episodes (bipolar I and II) instead of depression. This was also the case with the publication of DSM-IV and DSM-IV-TR. However, DSM-IV-TR does include a reference in the differential diagnosis section of Major Depressive Episode (MDE) that states, "there may be MDEs with prominent irritable mood or increased irritability (e.g., persistent anger, a tendency to respond to events with angry outbursts or blaming others, or an exaggerated sense of frustration over minor matters)" (American Psychiatric Association, 2000).

In summary, irritability switched from being viewed as the equivalent of dysphoric (depressed mood), that is, as *essential* to the diagnosis of Major Depressive Disorder (MDD), into one of a number of symptoms (e.g., sleep disturbance or psychomotor agitation) to being removed completely from the diagnosis of MDD and instead considered a hypomanic symptom. Currently, irritability is only considered an indicator of dysphoric mood when diagnosing MDD in children.

Today irritability is not assessed by clinicians employing DSM criteria to make a diagnosis of depression; nor is it included in most depression indices (e.g., Beck Depression Inventory). However, irritability and anger are commonly reported symptoms found among depressed patients in research studies (Fava et al., 2009; Baker, Dorzab, Winokur, & Cadoret, 1971; Perlis et al., 2005). Clinical studies have identified irritability's presence in 30% to 50% of patients with MDD and up to two-thirds of bipolar patients (Perlis et al., 2005). It has been linked with younger patients, women, unemployed, and people who are more severely depressed and have lower functional status or quality of life, treatment adherence, and suicide attempts (Fava et al., 2009; Perlis et al., 2005). In the next section, the link between irritability and male depression is reviewed.

IRRITABILITY AND MALE DEPRESSION

Irritability and anger have recently become a focal point for researchers investigating depression in men. Anger has been identified in samples of depressed men by several researchers and is one of the criteria proposed by Pollack for what he terms "Major Depressive Disorder – Male Type" (W. Pollack, 1998). He justifies the inclusion of anger in two ways. First, he cites psychoanalytic theory, which posits that anger is the

one emotion men can overtly express without damaging their sense of self and masculinity. Second, he cites his own clinical observation of men with depression in his practice. After providing a description of the male-type depression symptoms, Pollack presents a case study, “Hal,” whom he terms “an angry older man” to demonstrate the typical depressed male patient. This is the first account of anger and irritability being specifically linked to a male-type depression and is not based on any empirical study.

Since the publication of this text, several researchers have attempted to investigate the case of the “angry male depressive.” The data so far have not provided much evidence that irritability is present more in men than women. In fact, some studies have found that women report more irritability (Perlis et al., 2005). Marcus et al. (2005) reported finding no significant differences between men and women, but did find that irritability was present in about 80% of their sample. The authors suggest that it is possible that men are more likely to show externalizing behaviors in clinical settings, which leads clinicians to conclude that men exhibit more irritability than women. This evidence supports the argument that irritability is an important symptom to evaluate in both sexes. There is other evidence that supports the finding that irritability may be a symptom experienced equally between the sexes. Earlier, it was stated that irritability was a defining symptom of mania and part of the diagnostic criteria for manic episode, which is essential for the diagnosis of Bipolar Disorder. Interestingly, there are no significant sex differences regarding the prevalence of Bipolar Disorder in either 12-month or lifetime estimates (Kessler et al., 2005; Kessler, Chiu, Demler, & Walters, 2005). Therefore, perhaps when irritability is part of the diagnostic criteria determining the presence a mood disorder (as it is in the bipolar criteria), there are no sex differences

in prevalence. Despite the fact that no empirical studies have shown that irritability is more indicative of depression for men than women, researchers are still looking for evidence. The National Co-Morbidity Survey-Replication (NCS-R), one of the datasets used in the present study, included questions on Irritable Depression to investigate if irritability was the “missing link” responsible for the prevalence differences found among men and women (Kessler, 2009 private communication). In addition, the group working on the Mood Disorders for the DSM-V has reported that they are reviewing data on irritability to see if there is evidence supporting the addition or removal of the current symptoms (Fawcett, 2009).

STUDY DESCRIPTION

The current study provides an analysis of Irritable Depression (ID), in the National Institute of Mental Health Collaborative Psychiatric Epidemiology Surveys (CPES). The CPES combines three nationally representative surveys: the National Comorbidity Survey Replication (NCS-R), the National Survey of American Life (NSAL), and the National Latino and Asian American Study (NLAAS). The CPES project was completed in an effort to determine the prevalence, correlates, and risk factors of mental disorders in the United States population with special emphasis on minority group representation. With this goal in mind, all three of the surveys contained a core set of questions, common across the surveys. In addition, each survey collected data on specialized questions, as determined by the PI’s of each survey that they felt were important to assess with respect to the ethnic group focused upon. For more detailed information on the CPES see the Special Issue 2 of the International Journal of Methods in Psychiatric Research, Volume 13, Number 4, 2004 entitled "The NIMH Collaborative

Psychiatric Epidemiology Surveys Initiative: Designs, Methods, and Instrumentation".

The questions to assess Irritable Depression are not part of the NSAL and therefore only data from the NCS-R and NLAAS can be analyzed in this chapter. This work builds on the findings of Fava et al. (2009) who assessed irritability in depression in the NCS-R. The authors found that irritability was present as a symptom in 50% of the sample who met criteria for MDD. However, if irritability was substituted for dysphoric mood, and made a core symptom, the lifetime prevalence of MDD would increase by only 0.5%. If irritability was considered a secondary symptom (e.g., similar to sleep disturbance), an additional 0.6% of new cases would meet diagnostic criteria for MDD, which they termed "Irritable MDD." They also found that females were significantly more likely to meet criteria for Irritable MDD. The present study expands on their findings with the inclusion of the NLAAS data and focuses on sex differences at every level of analysis.

The goals of this analysis are twofold: (1) to describe Irritable Depression and (2) to compare Irritable Depression to Major Depressive Episode (MDE). The ID section describes the construction of the algorithm, assesses the prevalence of ID, sex differences in the endorsement of symptoms, sex differences in the sociodemographic predictors of ID, and describes the services use of people with ID. Following these analyses is a comparison of ID and MDE defined by DSM-IV-TR criteria. The CPES assessed depression in several ways. The interview's section on Major Depression included questions that can be used to create several depression variables including Major Depressive Disorder (MDD) and Major Depressive Episode (MDE). MDE is MDD without hierarchy. Hierarchy rules are criteria used in the DSM-IV to assess whether a symptom or set of symptoms can be better explained by another mental disorder that is

given priority over the disorder of interest. For example, if a person meets criteria for both Generalized Anxiety Disorder and MDD, using hierarchy rules, the person will only be assigned the diagnosis of MDD. On the other hand, if the person meets criteria for MDD and hypomania, that person would be assigned the diagnosis of hypomania and not MDD. The presence of at least one Major Depressive Episode is necessary for a diagnosis of Major Depressive Disorder. For the purposes of this research, I will use MDE, which represents the broader criteria, depression without hierarchy.

The following hypotheses will be tested:

(H1) ID will be more prevalent among men than women.

I constructed the first hypothesis because the ID variable is an attempt to describe an atypical depression that will better capture men's experiences. As presented earlier in the chapter, the literature suggests that irritability/anger is one of the few emotions that men may clearly express without making themselves vulnerable and at risk for appearing emasculated. Pollack (1998) suggests that irritability and anger is a symptom of the male-type depression that he described. The popular literature put forth by clinicians also proposes that men are more prone to present depression with symptoms such as irritability, energy loss and sleep issues (Diamond, 2005). While this work provides support for the hypothesis it is important to note that other studies have investigated the presence of anger and irritability among depressed patients and found contradictory results. Several studies have found that women report equal or higher rates of irritability as men (Benazzi & Akiskal, 2005; Perlis et al., 2005; Winkler et al., 2005; Newman et al., 2006; Newman, Gray, & Fuqua, 1999). However, only one other study has investigated the presence of irritability as a substitute for depressed mood in the diagnosis

of depression. The first study to do so, published earlier this year by Fava et al. (2009), used MDD and MDE interchangeably. Using MDD as the dependent variable operationalizes hierarchy rules, which makes the criteria more restrictive. The analysis in this dissertation is the first to focus exclusively on MDE and the presence of irritability as an equivalent of depressed mood. Therefore, it is still plausible, given that men are expected to be more willing to report irritability than sadness as a symptom, that more men would meet criteria for ID than women, who would report depressed mood and not sadness as their primary symptom.

(H2) ID will be more prevalent than MDE among men.

The second hypothesis is based on the notion that including an alternative conceptualization of mood disorder (i.e., "Irritable Depression") that is assumed to be more consistent with the manner in which men are socialized will result in more men meeting criteria for ID than for MDE. This hypothesis is an expansion of hypothesis one. Due to the fact that the primary screening question assessing MDE relies on an affirmative response to feelings of sadness or depressed mood, men may be lost (screened out) who otherwise would meet MDE screening criteria if irritability were also included. This hypothesis posits that men will more readily admit to the presence of irritability than sadness and that this will lead to a greater number of men meeting ID criteria than those who meet MDE criteria.

(H3) Male ID cases will endorse depression symptoms at a significantly greater percentage than male MDE cases.

The third hypothesis compares ID cases to MDE cases. Other than the initial screening question, there are no differences between the symptoms assessed in the ID

section of the questionnaire and those assessed in the MDE section of the interview. One of the driving hypotheses of the work is that men will be more likely to endorse irritability in the screening section of the questionnaire over sad mood because asking about sad mood is a gendered question. Once through the screening process, many of the other symptoms are gender neutral and men will endorse these items. The underlying assumption is that men do not meet depression criteria at the same rates as women because they will not endorse gendered symptoms, such as sad mood. However, when that barrier is removed and irritability is put in its place, men will then endorse enough of the other symptoms to meet case criteria. Therefore, a greater percentage of men will endorse the items in the ID section compared to the MDE section.

(H4) Work employment variables (including job satisfaction) will be a significant predictor of ID for men, but not for women.

The fourth hypothesis is based on findings from previous work of Shiels, Gabbay, Dowrick, and Hulbert (2004) who found that depressed men were more likely to be dissatisfied in their work than men who were not depressed. Disruption in work, namely an over-involvement or obsession with work, is a common theme reported among those authors and researchers who propose the existence of an alternative male depression. Pollack, Cochran and Rabinowitz, Diamond, and Kantor all suggest that therapists evaluating men for depression should look for changes or disruptions in work. Several of these authors also state that problems in work performance are one of the main motivating factors that drive men to seek help. They hypothesize that this phenomenon is related to masculinity and the importance of the male role as “provider.” Performing well at work is one way in which men measure their self-worth and functionality. If

depressed men are performing well at work, they can rationalize that any emotional problems are not serious enough to affect their work; therefore, they are not serious enough to deal with by seeing a professional. However, when emotional problems start to negatively affect work performance a man may be ready to seek help and directly face these issues. Therefore, given the central importance of work to many male's identity, hypothesis four predicts that work problems will be a significant predictor of ID for men, but not for women.

(H5) Men will be less likely than women to seek help for ID.

The fifth and final hypothesis states that among ID cases, women will be more likely to seek help. This hypothesis is widely supported by the literature, which shows that women are more likely to seek help for all types of health services, not just those to deal with mental health problems. Women are up to two times more likely to seek help for depression than men, even when severity of illness is controlled for (Kessler, Brown, & Boman, 1981). Other researchers have linked this lack of services use to adherence to traditional male gender roles (Magovcevic & Addis, 2005).

METHODS

CPES DATA COLLECTION AND MEASURES

The data in this chapter come from two arms of the Collaborative Psychiatric Epidemiology Survey, which consists of three separate national surveys funded by the National Institute of Mental Health (NIMH) to assess the prevalence and impairment of mental disorders in the United States. Between the two interviews (the NCS-R and NLAAS), over 700 people met the screening criteria to be included in the ID section of the interview. Table 3.1 provides the demographic characteristics of the sample used in

this chapter. The average age of respondents was 45 years, women comprised 52.7% of the sample, 70% of the sample was non-Hispanic White, and more than 50% of the sample had some education beyond high school. The mean household income was \$58,696, and men made significantly more money than women (\$65,708 compared to \$52,395 for women). Figure 1 illustrates the screening process and identifies how the two groups of respondents (the ID and MDE groups) overlap. There were 754 respondents who screened into the ID section of the questionnaire. Of that group, 600 people were identified as ID cases (more on the criteria used to identify cases later). Of the 600 cases, 312 people met the diagnostic criteria for MDE in addition to ID, leaving 288 unique ID cases.

The ID section was modeled on the MDD screening questions (explained in more detail below). Specifically, irritability replaced dysphoric mood (usually assessed as depressed mood and loss of interest) as the requirement for being asked additional depressive symptoms (Fava et al., 2009). After assessing symptoms of ID, respondents were asked to appraise the level of impairment they faced due to their condition. This appraisal was measured in three ways. They were administered the Sheehan Disability Scales (SDS) which assess impaired functioning in work, household, relationship and social functions. Responses were scored with a 0–10 visual analogue scale having response options labeled none (0), mild (1–3), moderate (4–6), severe (7–9), and very severe (10). Secondly, respondents were also asked to rate the severity level of their symptoms, from mild to very severe. Finally, respondents were asked about how their emotional reactions and behaviors changed because of their ID. Examples of this include, “During the worst month in the past year, how often did you feel cheerful?”

Responses for this 4-item scale ranged from “not at all” (score of 3) to “as much as always” (score of 0), with total scores ranging from 0-12, with higher score indicating greater impairment. Other psychosocial measures included an assessment of social support and work performance. Social support was assessed as self-report on a scale of 1-4, with scores ranging from six to 24, where higher scores indicated less support from friends and relatives. Respondents were asked to rate their satisfaction with their job performance on a scale of zero (none of the time) to four (all of the time). Scores ranged from zero to 40, with higher scores representing poorer job performance.

SAMPLE DESCRIPTION & SCREENING CRITERIA

The questions that make up the ID section included a subset of respondents who were screened into that section of the interview. Every respondent was asked the ID screening question (1) “Have you ever had a period lasting several days or longer when most of the time you were very irritable, grumpy, or in a bad mood?” The respondents who answered yes to this initial question were then asked two additional screening questions. (2) "Earlier in the interview, you mentioned having periods that lasted several days or longer when most of the day you were very irritable, grouchy, or in a bad mood. People with episodes of this sort often have other problems at the same time. These include things like changes in sleep, appetite, energy, the ability to concentrate and remember, and feelings of low self-worth. Did you ever have any of these problems during one of your episodes of being very irritable?", and (3) " What is the longest number of days in a row you ever had when you were very irritable and had some of these other problems most of the day". Respondents had to answer “yes” to the first two questions and answer 3 days or longer to the final question to be screened into the ID section of the interview.

The choice of 3 days as a sufficient time period to experiences symptoms was determined by the authors of the original CPES study. Once respondents were screened into the ID section, the presence of the following symptoms was assessed:

- Irritable, grouchy
- Feel discouraged
- Loss of pleasure
- Appetite change
- Sleep change
- Energy change
- Nervous or jittery
- Trouble concentrating
- Loss of self-confidence
- Think about committing suicide
- Think about harming someone else

CONSTRUCTION OF THE ID ALGORITHM

Irritable Depression is not an official diagnosis in the DSM-IV and there was no algorithm published to identify whether respondents met criteria for the mood disorder. The dataset simply contains the individual items and it was up to the author to write statistical syntax that constructed a new variable to determine whether a respondent met criteria for ID. The ID algorithm used in the present analysis was created by the author (LM) and is modeled after the algorithm for Major Depression. In order to meet case criteria for Major Depression, a person must have experienced at least five of the nine symptoms and one of the symptoms must be either (a) depressed mood, or (b) loss of interest. Following this model, in order to meet criteria for Irritable Depression, a person must have experienced at least five of the eleven symptoms and one of those symptoms must have been irritable mood. Therefore, respondents who had irritable mood plus four other symptoms were considered cases.

COMPARISON OF IRRITABLE DEPRESSION AND MAJOR DEPRESSION CASES

Some of the analyses presented in the Results section compare Irritable Depression cases with Major Depression cases. The Major Depression cases are identified using the Major Depressive Episode variable which is already available in the dataset (i.e., it was constructed and released with the data) while the Irritable Depression cases are identified using the algorithm identified in the previous section. As Irritable Depression is not a validated disorder it is very likely that Irritable Depression is in fact Major Depression that presents primarily with irritable mood. With this in mind, one set of analyses combines the Irritable Depression cases and Major Depressive Episode cases into a category labeled “Combined Depression” to examine sex differences in the prevalence rate and symptom endorsement of depression when these two types of depression are treated as one.

STATISTICAL ANALYSIS

All statistical analysis was done using STATA 10.0 SE version (StataCorp, 2007). Due to the sampling methods used in the data collection, it is necessary to use the complex survey data methods in the STATA statistical package to calculate the standard errors correctly. The CPES sample design used weighting and clustering, requiring all statistical analyses to be carried out using the Taylor series linearization method, which is the default when using the STATA “svy” commands. Bivariate analyses were conducted to examine sex differences in symptom endorsement for each ID symptom. Statistical significance was evaluated using two-sided design-based 0.05 level tests. Multivariate logistic regression models were run to identify predictors of ID and services use,

calculating the odds ratios (ORs) of having Irritable Depression when key demographic predictors are considered.

RESULTS

The results section is divided into four parts.

Part I examines the sex differences in the prevalence rates and symptom patterns of Irritable Depression and Major Depressive Episode. The percent endorsement for each symptom is compared in four ways: (1) a comparison of men and women's endorsement among Irritable Depression cases (2) a comparison of men and women's endorsement among Major Depressive Episode cases (3) a comparison of women's endorsement across Irritable Depression and Major Depressive Episode cases and (4) a comparison of men's endorsement across Irritable Depression and Major Depressive Episode cases.

Part II is a logistic regression analysis that examines the predictors of Irritable Depression. It contains three regression models, the first of which includes sex as a predictor. Following that two models stratified by sex were run, the first includes male ID cases and the second includes female ID cases.

Part III examines services use by Irritable Depression cases. This includes an investigation of the impact severity of illness had on the decision to seek services as well as a logistic regression analysis identifying the predictors of services use. As with the logistic regression analysis in Part II, three models were run, one with sex as a predictor and two models stratified by sex.

Part IV combines the Irritable Depression cases and Major Depressive Episode cases into a "Combined Depression." The prevalence rate and symptom endorsement pattern of Combined Depression are examined.

PART I: COMPARISON OF IRRITABLE DEPRESSION AND MAJOR DEPRESSIVE EPISODE: PREVALENCE AND SYMPTOM ENDORSEMENT

The questions assessing symptoms in the ID and MDE sections of the questionnaire are almost identical. Specifically, in the ID section the question assessing loss of energy reads, “Did you have a lot less energy than usual nearly every day during that period?” In the Depression section, the question for this same symptom reads, “Did you feel tired or low in energy nearly every day during that period even when you had not been working very hard?” Table 3.2 compares the prevalence of ID and MDE. The overall prevalence rate for ID was 5.8% (600/10,341 people). The prevalence was 5.0% for men and 6.5% for women. The prevalence rates of MDE were much higher, 23.7% overall, 18.4% for men, and 27.8% for women. Although the prevalence rate of ID was much smaller than MDE, there were similar patterns of sex differences between the two diagnoses. Specifically, in both ID and MDE, men made up 37% of the cases while women made up 63%. The sex ratio of men to women was 1.6 for both ID and MDE.

These results address the first three hypotheses proposed,

Hypothesis 1: ID will be more prevalent among men than women.

Hypothesis 2: ID will be more prevalent than MDE among men.

Hypothesis 3: Male ID cases will endorse depression symptoms at a significantly greater percentage than male MDE cases.

None of the above hypotheses was supported. ID was more prevalent among women than men, it was not more prevalent among men than MDE, and the item endorsement was similar for male ID and MDE cases.

Table 3.3 summarizes sex differences in the percent endorsement for each symptom. The table summarizes four analyses: (1) a comparison of men and women's endorsement among Irritable Depression cases (2) a comparison of men and women's endorsement among Major Depressive Episode cases (3) a comparison of women's endorsement across Irritable Depression and Major Depressive Episode cases and (4) a comparison of men's endorsement across Irritable Depression and Major Depressive Episode cases. There was a significant difference between men and women in two ID symptoms. Women were more likely to report oversleeping than men (75% of women compared to 54% of men). Men were more likely to report thinking about harming someone else (24% of men compared to 14% of women). Men and women with MDE reported a few differences in the presence of symptoms as well, but not the same symptoms as the ID cases. Women with MDE reported having larger appetites (50% for women compared to 26% of men) and less energy (87% of men compared to 79% of women) than men with MDE. Men with MDE reported more nervous or jittery feelings (33% of men compared to 25% of women) and having more suicidal thoughts (36% of men compared to 31% of women) than women with MDE. There are several interesting differences in the symptom profiles of ID men and MDE men and ID women and MDE women. A larger percentage of men with Irritable Depression compared to men with Major Depressive Episode reported having trouble sleeping (85% of male ID cases compared to 68% of male MDE cases). Men with MDE reported having more energy than those with ID (26% of male MDE cases compared to 18% of male ID cases). Women with ID reported having a smaller appetite (85% of ID women compared to 68% of MDE women), more trouble sleeping (85% of ID women compared to 76% of MDE

women), having less energy (94% of ID women compared to 87% of MDE women), and being more nervous or jittery (45% of ID women compared to 25% of MDE women) than women with MDE. Women with MDE reported having larger appetites (50% of MDE women compared to 25% of ID women), more energy (29% of MDE women compared to 15% of ID women), and more suicidal thoughts (31% of MDE women compared to 27% of ID women) than women with ID.

PART II: PREDICTORS OF IRRITABLE DEPRESSION

Logistic regression was completed to determine which, if any, sociodemographic characteristics are significant predictors of Irritable Depression. Three models were run, one with sex as a predictor, the second restricted the sample to men and the third restricted to women only. Table 3.3 displays the logistic regression results. Women are 1.6 times more likely than men to meet criteria for ID. This significant result led to asking whether the predictors of ID would be different for men and women. In linear models this could be tested by the inclusion of an interaction term (e.g. sex*social support), but that is not as easily done in logistic regression analysis when results are reported as either coefficients or odds ratios (Norton, Wang, & Ai, 2004). Therefore, stratifying the models by sex allowed exploration of whether the predictors of ID differed for men and women.

Table 3.4 also summarizes the logistic regression results for the two stratified regression models. The stratified models identified different patterns in the predictors of ID among men and women. Age was a significant predictor of ID for both men and women (OR 0.972, $p < .001$), indicating younger adults are at greater risk of ID than older adults. For males, being Black significantly decreases the odds of Irritable Depression

(OR 0.345, $p < 0.05$); men who report their race as “Other” (e.g., Asian, Native Hawaiian) have increased odds of ID (OR 1.87, $p < 0.05$). For women, being Hispanic significantly increased the odds of ID (OR 2.09, $p < .001$). There were no significant findings related to education level for men or women. Having a job significantly decreased the odds of ID for men (OR 0.595, $p < .05$). Middle class men (those making between \$35,000 and \$75,000), had significantly increased odds of ID (OR 1.61, $p < .05$) compared to those making more than \$75,000 a year. Being divorced significantly increases the odds of have ID for both men (OR 1.96, $p < .01$) and women (OR 1.61, $p < .01$). Higher scores on the social support scale (indicating impaired social support) was a significant predictor of ID for men (OR 1.12, $p < .01$). Hypothesis 4 stated that, employment variables (including job satisfaction) would be a significant predictor of ID for men, but not for women. Unfortunately the number of respondents in the ID group who answered this series of questions was too small ($n=45$) to include in these analyses. Therefore, the employment variables were not assessed as a predictor of ID.

PART III: IRRITABLE DEPRESSION AND SERVICES USE

Irritable Depression cases were asked to categorize how severe they felt their ID was. Table 3.5 shows the distribution of cases by severity level and the number and percent of cases within each severity level who sought treatment for Irritable Depression. The percentages of men and women in each severity category were compared. There were significant sex differences with a greater percentage of men classifying their ID as moderate (56%) compared to women (47%). A significantly larger percentage of women appraised their ID as very severe (10%) compared to men (7%). A substantial number of cases reported that their ID was severe or very severe, 33% of men (26% rating ID as

severe and 7% rating ID as very severe), and 38.2% of women (28% rating ID as severe and 10% rating ID as very severe). This indicates that respondents were aware of their disorder and the willing to acknowledge that it was having a significant detrimental effect on their lives.

Table 3.5 also shows the number of cases who sought treatment by severity level. Of the 600 Irritable Depression cases, 294 (49%) reported seeking help for their condition. Of that group, women were more likely than men to seek treatment. Specifically, 53% of women (200 out of 377) sought help compared to 42% of the men (94 out of 223). However, there were several interesting differences in the services use pattern. While women were more likely to seek help, this was actually due to more women seeking services at lesser severity levels than men. Of the women who classified their ID as mild or moderate, 50% sought help compared to only 30% of the men who classified their ID as mild or moderate. Men who classified their ID as severe were actually more likely than women to seek professional help, 64% of men compared to 58% of women. The results for those rating their ID as very severe were similar, with 80% of men reporting seeking help compared to 56% of women.

Logistic regression was performed to identify the predictors of services use for ID and to test hypothesis five, that men will be less likely than women to seek help for ID. Similar to the regression models run to identify the predictors of ID, three models were run, a full model and two models stratified by sex. The results, shown in Table 3.6, illustrate that in the complete model, being employed decrease the odds of seeking services for ID (OR .483, $p < .01$). Several predictors increased the odds of ID including,

being female (OR 1.84, $p < .05$), severity of ID (appraisal of severe was OR 2.4, $p < .05$ and appraisal of very severe was OR 4.4, $p < .05$).

When the model was run separating the service predictors for men and women several differences emerge, as summarized in Table 3.6. Never having been married was the only characteristic that increased the odds of seeking services for men, (OR 3.58, $p < .05$). For women, several predictors significantly increased the odds of seeking services for ID. This included appraisal of severity as moderate (OR 4.05, $p < .01$), severe (OR 2.87, $p < .05$), and very severe (OR 6.76, $p < .001$), having 12 years of education (OR 2.51, $p < .05$), and having between 13 – 15 years of education (OR 2.9, $p < .05$). For women, several demographic characteristics also significantly decreased the odds of seeking services for ID, including being Black (OR .20, $p < .05$), reporting race as “Other” (OR .313, $p < .05$), being employed compared to not being in the workforce (OR .39, $p < .05$), being unemployed compared to not being in the workforce (OR .343, $p < .05$), making less than \$15,000 a year (OR .281, $p < .01$), and making between \$15,000 and \$34,999 a year (OR .45, $p < .01$).

PART IV: COMBINATION OF IRRITABLE DEPRESSION AND MAJOR DEPRESSIVE EPISODE CASES

The analyses presented so far in this chapter have considered irritability as a required symptom in order to meet case criteria of Irritable Depression, treating it as a disorder that is separate from Major Depressive Episode. Part IV of the analysis assumes that Irritable Depression is not a separate disorder from Major Depression. This section investigates whether men who have DSM MDD/MDE present with irritable mood instead of sadness. That is, this analysis assesses the effect of "opening another door" through

which respondents could enter the MDE category. This analysis is consistent with the argument that rather than creating a new disorder, ID, the existing criteria for MDE should be modified. I surmise that the sex difference in the prevalence MDE will be reduced when irritability is used to expand the symptoms required for an assessment of MDE. Based on these assumptions, adding cases of ID to MDE cases would be a more comprehensive determination of the prevalence of MDE. This new dependent variable is referred to as "Combined Depression."

Table 3.7 contains the prevalence rate of Combined Depression. The sex ratio of 1.49 indicates that while considering irritability as a core symptom identified depression cases that would otherwise have been undetected; there remains a significant sex difference in the prevalence of depression. Table 3.8 shows the item endorsement by sex for the Combined Depression cases. Among the Combined Depression cases (N = 2,737), irritability is present in significantly more men (84%) than women (80%). In addition to greater irritability, men also significantly endorsed having more energy (28.4% of men compared to 20.1% of women), feeling more nervous or jittery (41% of men compared to 34% of women), and more suicidal thoughts (39.8% of men compared to 34.6% of women). Women endorsed significantly more depressed mood (93.5% of women compared to 88.7% of men), having a larger appetite (47.2% of women compared to 26.4% of men), and having less energy (92.8% of women compared to 84.3% of men).

DISCUSSION

Despite the suggestions in the literature that including irritability as a core symptom of depression could narrow or eliminate the difference in prevalence rates between men and women, in this study, more women met the diagnostic criteria for

Irritable Depression. The literature proposes that men are more likely to exhibit irritability than sadness as a marker of depression, and that if clinicians and screening instruments looked for irritability more men would be diagnosed with depression. The results of this study demonstrated that irritability is present among both men and women. These findings suggest that although irritability may not be the key symptom that will lead to increased detection of depression in men it is still a very important component of depression.

Most of the hypotheses proposed before beginning this work were not supported. Specifically, in contrast to the first hypothesis, ID was not more prevalent among men than women. To the contrary, and despite the arguments contained in the literature on gender and depression, women were significantly more likely than men to meet criteria for ID. There are a number of possible explanations for this finding. One possible explanation is that symptoms other than the one assessing dysphoric mood are also gendered in a way that discourages men from endorsing them. Perhaps there are not enough gender-neutral symptoms in the criteria for men to endorse that will put them above the threshold number to meet case criteria. A second possible explanation is that the symptoms currently assessed in measures of depression do not accurately capture the symptoms depressed men exhibit. For instance, the literature suggests that depressed men will often present with substance use, change in sexual behavior, increased anger and aggression, and risk-taking behavior. None of these symptoms was assessed in the ID criteria.

Regarding the second hypothesis, MDE was much more prevalent than ID, among men and women. This particular result was surprising because irritability was present in

a large percentage of people, but that did not translate into a large number of ID cases. The primary explanation for this finding appears to be that very few cases presented with Irritable Mood who did not also present with dysphoric mood or anhedonia. Therefore, if a person presented with both irritable mood and dysphoric mood or anhedonia, that person met MDE criteria and not ID criteria.

Hypothesis three was also largely unsupported. It stated that male ID cases would endorse symptoms more than male MDE cases, which turned out to be true for only one symptom, males with ID endorsed having more trouble sleeping than male with MDE. Although the hypothesis was not supported, the fact that ID and MDE cases were so similar provides support for the argument that irritability is a sign of depression and not a separate disorder. Although hypothesis three did not include a prediction about the differences between women ID and MDE cases, there were many more symptoms differences between the women than the men that are worth discussing. Women with MDE endorsed having suicidal thoughts and a larger appetite more than women with ID. Women with ID also reported having a smaller appetite, trouble sleeping, less energy, and feeling nervous or jittery significantly more than women with MDE. Therefore, it does appear that there are quite a few differences between women who primarily present with irritability rather than dysphoric mood. Notably, most of these differences were found in somatic-based symptoms, such as appetite change and sleeping, lack of energy, and feeling jittery. A possible explanation for this finding is that irritability is more closely linked with physical agitation and problems than dysphoric mood. Perhaps when women are dealing with feeling prolonged irritation these symptoms are their bodies

ways of trying to deal with that irritation, whereas the physical outlet for sadness is crying.

Hypothesis four was not investigated because of the small number of respondents who answered the employment satisfaction questions. Hypothesis five stated that women would more likely to seek services than men and overall this hypothesis was supported. Regarding services use, as seen with most mental health disorders, men meeting criteria for ID were less likely than women to seek services. However, this finding was actually more complicated than it first appears. The results demonstrated that more women who appraised their ID as mild or moderately severe sought treatment at much greater numbers than men. However, when it came to those who appraised their ID as severe or very severe, a significantly higher percentage of men sought help than women. This finding suggests that men and women probably had different appraisal standards of what constitutes severe and moderate. Once men recognized the problem as being severe they were likely to seek help, however their threshold for defining a serious problem appears to be much higher than that of a woman. Women were likely to get help when the condition was a serious, but moderate problem. However, they were not as likely as men to seek help when they identified their condition as severe or very severe. This seems odd, why would a greater percentage of women seek help for a moderate condition than a severe condition? One possible explanation is that those with very severe ID were unable to seek help because of the severity of their condition. As discussed in the previous hypothesis, women with ID report more energy loss and this lack of energy could prevent them from leaving the house or having enough energy to find help. Perhaps when ID is

severe the women were immobilized by their depression and unable to summon enough energy to seek help.

Regarding the logistic regression results for predictors of services use, the characteristics that predicted services use in women did not hold true for men. In fact, nothing other than having never been married predicted that men would seek help for Irritable Depression. This is very disturbing because it appears that men of every race/ethnicity, age, and sociodemographic category are reluctant to seek services for this particular mental health problem. Clinicians and primary care doctors need to be made aware of these findings so that they can learn how to identify these males and provide help, as it is unlikely that most would seek help on their own.

While Irritable Depression was not more prevalent among men than women, the “Combined Depression” analyses revealed that irritability as a *symptom* of depression was endorsed more often by men compared to women. This study demonstrated that men are willing to acknowledge irritability as an emotion and that increased and persistent irritability is an important symptom that should be assessed as part of a depression evaluation. These results provide evidence to support the re-inclusion of irritability as a symptom of Major Depressive Disorder. By including irritability as one of the core symptoms of depression, an additional 288 cases were identified as being depressed who were previously not identified. Irritability was present in over 80 percent of the Combined Depression cases, the percentage of men reporting irritability as a symptom was significantly higher than the percentage of women, and was extremely high in both groups (84% of men compared to 80% of women).

Several interesting differences regarding ID and sex were found in this study. The logistic regression analysis revealed quite different predictors for men and women with Irritable Depression. This is important to note for anyone interested in trying to identify those at risk for Irritable Depression, or those with MDE with irritability as a symptom. Men in the middle class (\$35,000 - \$74,999) were at increased risk of ID compared to those making more than \$75,000 a year. This is an interesting finding for which there is no obvious explanation. This result might suggest that middle class men's lives include a unique set of stressors that make them more prone to Irritable Depression than men with more money. For instance, one's income is directly related to their employment and job performance, which I was not able to include in these analyses. However, the literature says that men's performance at work is related to masculinity and the importance of the male role as "provider." Performing well at work is one way in which men measure their self-worth and functionality. Part of that measurement includes how satisfied a man is with his current salary. For many men living a middle class life may not feel successful. Perhaps the source of their irritability is related to their financial status and that is increasing their risk for ID. Previous work by Shiels, Gabbay, Dowrick, and Hulbert (2004) found that depressed men were more likely to be dissatisfied in their work than men who were not depressed. Therefore, given the central importance of work and its direct relationship to income, it is possible that this finding is actually a proxy measure of depressed men's dissatisfaction with their job performance.

LIMITATIONS

This study was limited in several ways. First, it uses self-report cross-sectional data. These questions ask respondents to think about the presence of symptoms and

disorders in the past, considering either the last 12 months or throughout the course of their lifetime, not in their current state. This introduces issues such as poor recall or perhaps a lack of willingness to report having these problems. The literature suggests that relying on self-report and symptom recall leads to underreporting condition by men. For example, Frank et al. (1988) found that women were more likely to score higher on self-report instruments like the Beck Depression Inventory, which suggests studies relying on self-report may always reflect underreporting by men. In addition, as men recover from their depression they may be less likely to report symptoms that they used to have. Angst and Dobler-Mikola, (1984) conducted a study in which they re-contacted people who had been diagnosed with Major Depressive Disorder (as defined by DSM-III criteria) and asked them to recall which symptoms they had during their depression. The authors found that women tended to remember all of their symptoms, while men's recall of symptoms decreased as the time since the depressive episode increased. Specifically, men tended to better remember somatic symptoms (appetite, sleep, and energy problems) and forget symptoms such as worry, poor concentration, and feelings of worthlessness. Men appear to be less willing to admit to the presence of symptoms that threaten their self-image of manhood, both during and after their depressive episode. This poses a challenge for clinicians and researchers, as they are forced to rely on self-report in order to determine if a man is depressed.

A second limitation was that irritability was assessed by a single question that included the terms "irritability, grumpy, or being in a bad mood." This question did not explicitly include anger as a component or equivalent of irritability, which may have reduced the level of endorsement. A third limitation was that the respondents were asked

about the presence of depression symptoms as a checklist. They were not given the opportunity to describe which symptoms they found the most debilitating or impairing. This sample did not reflect a clinical population who was seeking services. Therefore, we cannot know if irritability would be reported as the primary symptom when men or women seek help. Although irritability is clearly an important symptom to ask about when assessing depression, it remains unclear whether it deserves to be re-instated as a core symptom, on par with sadness or anhedonia, or if it should be a lesser symptom, such as changes in sleeping patterns.

A final limitation was that this analysis could only assess sex and not gender differences. Future studies are needed that include measures of masculinity to provide insight other than just sex differences. The differences found in Irritable Depression between men and women most likely reflect gender differences, related to the ways in which men and women recognize and report mental health problems, but that could not be addressed directly in this study. The fact that social support was a significant predictor of ID for men, but not women provides some evidence that these differences are related to the social construction of being male, and not simply being biologically male. This scale assessed how easily and often it was for respondents to open up and talk to friends and family when they have problems and males scored significantly higher on the scale, indicating less social support and less engagement and willingness to talk about these types of problems with friends and family. Future studies on men and depression should include measures of social support and masculinity to understand how gender influences the experience and report of depression.

CONCLUSION

Overall, these findings suggest that irritability is an important symptom that is present in depression and should be assessed. These results do not suggest that Irritable Depression is a different disorder than depression; rather they provide evidence that irritability should be included in the diagnosis of Major Depression. These results had little impact on reducing the sex ratio of depression. Adding irritability to the depression criteria is not a sufficient enough of a change to fully reflect men's experiences of depression. However, it clearly is a step in the right direction as was evidenced by the "Combined Depression" findings. Although irritability is present in a high percentage of depression cases, including both men and women, when irritability is added to the diagnostic criteria a new symptom pattern for men emerges. When the ID and MDE cases were joined into the "Combined Depression" category men significantly endorsed more irritability, hyperactivity, feeling jittery, and more suicidal thoughts than women. The differences regarding hyperactivity and irritability did not exist among the MDE cases suggesting that adding irritability does provide a clearer picture of men's experiences of depression. This information, along with the fact that there were sex differences in the predictors and services use data provide evidence that men experience depression differently from women. This will be important to those interested in identifying men with depression as well as those treating and designing preventive interventions. The next chapter will build upon these findings by further expanding the depression diagnostic criteria to examine symptoms other than irritability that reflect men's experiences of depression.

CHAPTER THREE TABLES AND FIGURES

FIGURE 1: DESCRIPTION OF SCREENING PROCESS AND CASE OVERLAP BETWEEN IRRITABLE DEPRESSION AND MAJOR DEPRESSIVE EPISODE

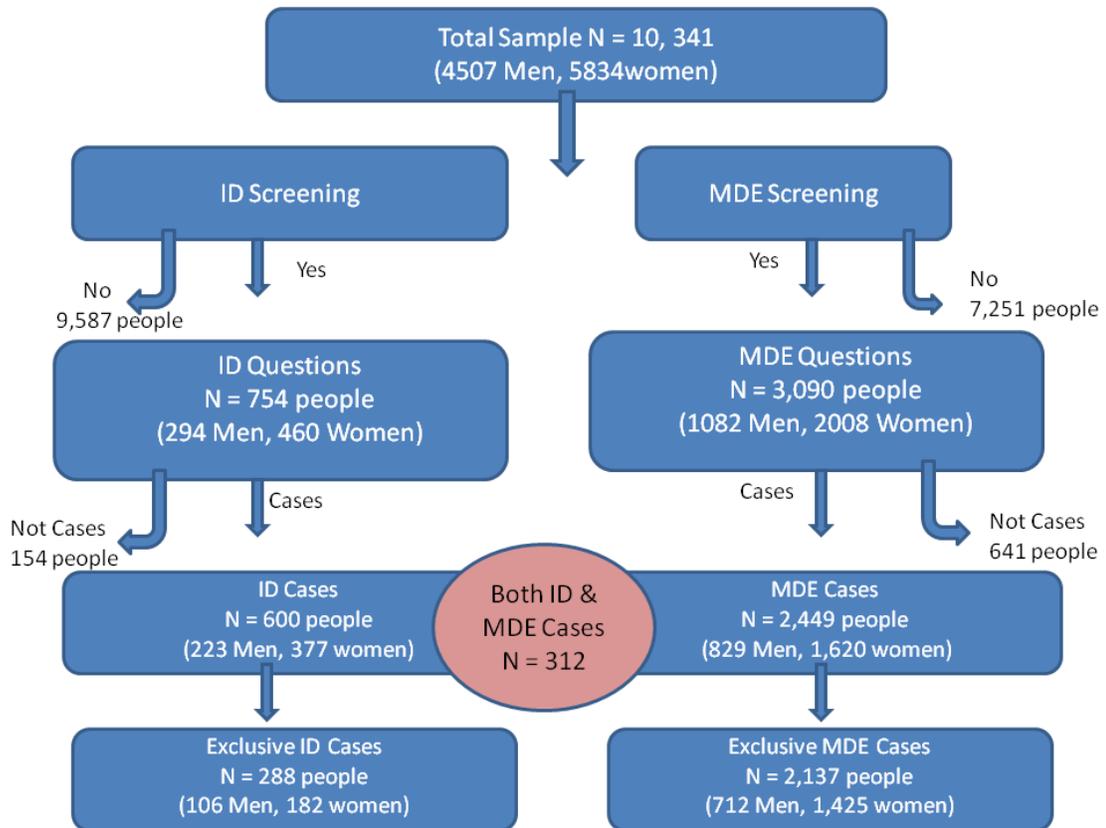


TABLE 3.1: IRRITABLE DEPRESSION SAMPLE DEMOGRAPHIC CHARACTERISTICS

	Total N=10341	Male N=4507 47.3%	Female N=5834 52.7%
Age (Mean)	44.9 years	43.8 years	45.9 years
18-24	14.8	7.6	7.2
25-34	17.2	8.27	9.1
35-44	20.5	10.3	10.2
45-54	19.6	9.3	10.3
55-64	11.3	5.0	6.3
65+	16.6	7.0	9.6
Race/Ethnicity			
Non-Hispanic white	70.7	33.7	37.1
Non-Hispanic black	10.9	4.7	6.2
Hispanic	11.7	6.0	5.7
Other	6.6	2.9	3.7
Education			
Less than high school (0-11 Years)	18.0	9.1	8.9
Completed high school (12 Years)	31.2	14.3	16.9
Some college (13-15 Years)	27.5	12.5	15.0
College Degree or Higher (16+ Years)	23.3	11.4	11.9
Marital Status			
Never Married	22.3	11.4	10.9
Married	57.6	29.6	28.0
Separated/Widowed/Divorced	20.1	6.3	13.9
HH Income			
Median	\$46,000	\$50,499	\$39,500
Mean	\$58,696	\$65,708	\$52,395
\$0 - \$14,999	17.2	6.0	11.2
\$15,000 - \$34,999	21.2	9.0	12.2
\$35,000 - \$74, 999	33.2	16.7	16.4
\$75,000+	28.4	15.6	12.8

TABLE 3.2: A COMPARISON BETWEEN IRRITABLE DEPRESSION AND MAJOR DEPRESSIVE EPISODE: PREVALENCE RATES AND CASE DESCRIPTIONS BY SEX

	Irritable Depression	Major Depressive Episode
Total	5.8% (N = 600)	23.7% (N = 2,449)
Men	5.0% (N = 223)	18.4% (N = 829)
Women	6.5% (N = 377)	27.8% (N = 1,620)
Ratio F:M	1.3	1.51

TABLE 3.3: A COMPARISON BETWEEN IRRITABLE DEPRESSION AND MAJOR DEPRESSIVE EPISODE: SYMPTOM ENDORSEMENT BY SEX

Item Description	Irritable Depression Cases % represents endorsed the item			Major Depressive Episode Cases % represents endorsed the item		
	Total % (SE)	Male % (SE)	Female % (SE)	Total % (SE)	Male % (SE)	Female % (SE)
Irritable, grouchy	100 (0)	100 (0)	100 (0)	62.4 (2.2)	64.7 (2.2)	61.1 (1.2)
Depressed Mood	84.0 (1.9)	80.7 (4.4)	85.9 (3.1)	93.4 (.69)	90.5 (1.4)	95.0 ^b (.76)
Anhedonia	77.2 (2.2)	77.2 (5.0)	77.2 (2.8)	85.0 (.89)	86.2 (1.5)	84.2 (1.3)
Feel Discouraged	89.2 (2.0)	88.8 (4.0)	89.5 (1.8)	86.8 (.92)	86.2 (1.3)	87.1 (1.1)
Loss of Pleasure	74.3 (3.5)	70.2 (4.8)	76.72 (4.0)	68.9 (1.6)	66.3 (2.5)	70.4 (1.5)
Larger Appetite	23 (1.7)	18.9 (4.6)	25.5 (3.3)	40.3 (2.1)	26.4 (2.9)	49.9 ^{b,§} (3.3)
Smaller Appetite	81 (2.5)	75.3 (4.5)	84.7 [§] (3.2)	66.1 (1.1)	63.8 (2.4)	67.5 (1.5)
Trouble Sleeping	85.4 (1.7)	85.4* (3.1)	85.4 [§] (2.2)	75.2 (.90)	74 (1.7)	76 (1.1)
Over-sleeping	67.4 (6.6)	53.5 (10.6)	75.3 ^a (5.5)	59.4 (2.1)	55.7 (3.5)	61.8 (2.7)
More Energy	16 (2.1)	18.3 (3.2)	14.7 (2.6)	27.7 (3.0)	26.3* (3.6)	29.1 [§] (3.7)
Less Energy	91.3 (1.4)	87.4 (2.7)	93.5 [§] (1.8)	83.9 (.85)	78.7 (1.6)	87 ^b (.99)
Nervous or Jittery	46.3 (3.0)	49 (5.1)	44.6 [§] (3.3)	28.4 (1.4)	32.7 ^b (2.3)	25.3 (1.4)
Indecisiveness	82 (2.6)	83.6 (4.2)	81.2 (2.3)	77.5 (.95)	75.8 (1.6)	78.5 (.94)
Loss of Self-Confidence	84.2 (1.8)	84.2 (3.2)	84.1 (2.3)	77.1 (.97)	75 (1.7)	78.5 (1.1)
Suicidal Thoughts	29.9 (2.5)	34.6 (4.1)	27.1 (3.1)	33.2 (1.2)	36.1 ^b (2.2)	31.4 [§] (1.3)
Homicidal/Assaultive Thoughts	17.8 (2.3)	23.8 ^a (4.7)	14.3 (1.7)	N/A	N/A	N/A

Note: ^a indicates a significant difference between the % of men and women endorsing an Irritable Depression symptom at the p<0.05 level.

^b indicates a significant difference between the % of men and women endorsing a Major Depressive Episode symptom at the p<0.05 level.

* Indicates significant difference between % of male Irritable Depression cases who endorsed an item and the % of male Major Depressive Episode cases who endorsed the comparable item at the p=.05 level. (Only cases that meet Irritable Depression criteria, but NOT Major Depressive Episode criteria are compared.)

§ Indicates significant difference between % of female Irritable Depression cases who endorsed an item and the % of female Major Depressive Episode cases who endorsed the comparable item at the p=.05 level. (Only cases that meet Irritable Depression criteria, but NOT Major Depressive Episode criteria are compared.)

TABLE 3.4: IRRITABLE DEPRESSION LOGISTIC REGRESSION RESULTS:
SOCIODEMOGRAPHIC PREDICTORS

	Full Model OR (95% CI)	Stratified: Male OR (95% CI)	Stratified: Female OR (95% CI)
Sex			
Male	1.0	N/A	N/A
Female	1.6 (1.18 – 2.02)***	N/A	N/A
Age	0.972 (.964 – .981)***	.972 (.958 – .986)***	.972 (.963 – .981)***
Race/ethnicity			
Non-Hispanic White	1.0	1.0	1.0
Non-Hispanic Black	.695 (.369 – 1.31)	.345 (.111 – 1.02)*	.917 (.481 – 1.75)
Hispanic	1.85 (1.35 – 2.56)***	1.67 (.852 – 3.28)	2.09 (1.44 – 3.01)***
Other	1.54 (1.16 – 2.04)*	1.87 (1.09 – 3.23)*	1.38 (.917 – 2.06)
Education			
0 – 11	1.0	1.0	1.0
12	1.10 (.641 – 1.89)	.750 (.338 – 1.66)	1.45 (.871 – 2.41)
13 – 15	.859 (.513 – 1.44)	.578 (.230 – 1.45)	1.13 (.685 – 1.87)
16+	1.07 (.587 – 1.97)	.953 (.376 – 2.41)	1.21 (.676 – 2.19)
Marital Status			
Married/Cohabitate	1.0	1.0	1.0
Divorced	1.76 (1.32 – 2.34)***	1.96 (1.20 – 3.22)**	1.61 (1.11 – 2.33)**
Never Married	.92 (.677 – 1.24)	1.17 (.646 – 2.12)	.730 (.506 – 1.05)
Employment Status			
Employed	.731 (.545 – .980)*	.595 (.387 – .914)*	.826 (.527 – 1.29)
Unemployed	1.03 (.649 – 1.64)	1.15 (.541 – 2.45)	1.00 (.528 – 1.90)
Not in labor force	1.0	1.0	1.0
Household Income			
< \$15,000	1.49 (.974 – 1.78)	1.44 (.796 – 2.58)	1.55 (.778 – 3.09)
\$15,000 - \$34,999	1.23 (.767 – 1.98)	1.02 (.551 – 1.90)	1.34 (.761 – 2.38)
\$35,000 - \$74,999	1.32 (.974 – 1.78)	1.61 (1.02 – 2.53)*	1.10 (.708 – 1.72)
\$75,000+	1.0	1.0	1.0
Social Support	1.06 (1.01 – 1.12)**	1.12 (1.04 – 1.20)**	1.03 (.979 – 1.09)

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

TABLE 3.5: COMPARISON OF IRRITABLE DEPRESSION CASES SEEKING TREATMENT BY SEX AND SEVERITY LEVEL

	Total		Mild		Moderate		Severe		Very Severe	
Total										
Cases	100%	N = 600	13%	N = 80	51%	N = 303	27%	N = 163	9%	N = 54
Treatment	49%	N = 294	26%	N = 21	47%	N = 141	60%	N = 98	63%	N = 34
Male										
Cases	100%	N = 223	11%	N = 25	56%*	N = 125	26%	N = 58	7%	N = 15
Treatment	42%	N = 94*	24%	N = 6	31%	N = 39	64%	N = 37	80%	N = 12
Female										
Cases	100%	N = 377	15%	N = 55	47%	N = 178	28%	N = 105	10%*	N = 39
Treatment	53%	N = 200*	27%	N = 15	57%	N = 102	58%	N = 61	56%	N = 22

Note: * indicates significant difference between men and women at $p < 0.05$

TABLE 3.6: IRRITABLE DEPRESSION LOGISTIC REGRESSION RESULTS: PREDICTORS OF SERVICES USE BY SEX

	Full Model	Stratified: Male OR (95% CI)	Stratified: Female OR (95% CI)
Sex			
Male	1.0	N/A	N/A
Female	1.84 (1.11 – 3.03)*	N/A	N/A
Age	1.01 (.998 – 1.04)	1.03 (.989 – 1.07)	1.03 (.997 – 1.05)
Race/ethnicity			
Non-Hispanic White	1.0	1.0	1.0
Non-Hispanic Black	.317 (.087 – .956)	.604 (.101-2.33)	.200 (.055-.674)*
Hispanic	.683 (.384 – 1.19)	.753 (.281-1.85)	.577 (.327-1.02)
Other	.545 (.274 – 1.05)	.778 (.266-2.41)	.313 (.142-.675)*
Education			
0 – 11	1.0	1.0	1.0
12	2.10 (.956 – 4.63)	1.85 (.554-6.56)	2.51 (.815-4.95)*
13 – 15	1.91 (.978 – 4.05)	1.14 (.386-5.26)	2.90 (1.28-6.47)*
16+	.939 (.411 – 2.79)	1.56 (.347-9.52)	.756 (.211-2.00)
Marital Status			
Married/Cohabiting	1.0	1.0	1.0
Divorced	1.72 (.923 – 3.41)	1.98 (.678-6.52)	1.40 (.679-2.87)
Never Married	1.69 (.900 – 2.92)	3.58 (1.12-6.76)*	1.14 (.457-3.44)
Employment Status			
Employed	.483 (.233 – .731)**	.564 (.156-1.27)	.399 (.174-.802)*
Unemployed	.538 (.211 – 1.32)	1.74 (.296-6.46)	.315 (.112-1.04)*
Not in labor force	1.0	1.0	1.0
Household Income			
< \$15,000	.538 (.261 – 1.08)	.694 (.256-1.82)	.225 (.096-.821)**
\$15,000 - \$34,999	.494 (.233 – 1.05)	1.05 (.331-4.21)	.202 (.073-.659)**
\$35,000 - \$74,999	1.05 (.619 – 1.78)	1.48 (.786-3.17)	.431 (.182-1.11)
\$75,000+	1.0	1.0	1.0
Severity			
Mild	1.0	1.0	1.0
Moderate	1.61 (.939 – 3.83)	.574 (.143-1.76)	3.34 (1.46-8.07)**
Severe	2.44 (1.16 – 5.84)*	1.14 (.331-6.36)	2.53 (1.00-6.26)*
Very Severe	4.47 (1.61 – 13.79)**	2.76 (.422-11.41)	7.09 (1.87-21.8)***

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

TABLE 3.7: PREVALENCE OF COMBINED DEPRESSION

Combined Depression (Irritable Depression & Major Depressive Episode)		
Total	26.5%	N = 2,737
Men	20.7%	N = 935
Women	30.9%	N = 1802
Ratio F:M	1.49	

TABLE 3.8: COMBINED DEPRESSION: ITEM ENDORSEMENT BY SEX

Item Description	Combined Depression Cases % represents endorsed the item		
	Total % (SE)	Male % (SE)	Female % (SE)
Irritable, grouchy	81.7 (.82)	84.0 (1.5)*	80.0 (.93)
Depressed Mood	91.7 (.75)	88.7 (1.3)	93.5 (.78)***
Anhedonia	83.5 (.84)	84.6 (1.4)	82.8 (1.1)
Feel Discouraged	91.7 (.73)	92.2 (1.0)	91.3 (.87)
Loss of Pleasure	76.4 (1.3)	75.4 (2.2)	77.0 (1.5)
Larger Appetite	39.2 (1.7)	26.4 (3.9)	47.2 (2.9)***
Smaller Appetite	70.7 (1.1)	69.5 (2.6)	71.5 (1.7)
Trouble Sleeping	80.1 (.83)	80.1 (1.7)	80.1 (1.1)
Over-sleeping	69.6 (2.3)	63.4 (4.3)	73.2 (3.1)
More Energy	23.7 (2.1)	28.4 (3.3)*	20.1 (2.2)
Less Energy	89.7 (.90)	84.3 (1.7)	92.8 (.94)***
Nervous or Jittery	36.9 (1.7)	41.0 (2.7)**	34.0 (1.8)
Indecisiveness	84.3 (.86)	83.4 (2.0)	84.8 (.68)
Loss of Self-Confidence	80.5 (.93)	78.8 (1.8)	81.5 (.99)
Suicidal Thoughts	36.5 (1.2)	39.8 (2.2)**	34.6 (1.2)

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

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Chapter 4: MALE DEPRESSION

INTRODUCTION

Chapter Two proposed that men might experience depression in a different way because hegemonic masculinity is at odds with displaying the emotions associated with depression. The premise proposes that because it is not acceptable in our society for men to express emotional distress such as sadness and crying they must find alternative means of expression that clue loved ones and providers into the fact that something is wrong. If that is the case, then what would those expressions of pain look like? Some researchers state that when men experience emotional pain they are more likely to react with anger, self-destructiveness through acting out and engaging in high risk behaviors, distracting themselves or numbing the pain through substance use, gambling, womanizing, and workaholism (Lynch & Kilmartin, 1999). Others have proposed that irritability could be the key symptom linking men and depression and that was explored in the previous chapter (Diamond, 2005; Newman et al., 2006). The results of Chapter Three demonstrated that irritability is not gender-specific. Rather, I found that irritability was a symptom experienced by both men and women and including it in the diagnostic criteria did not decrease the sex ratio of depression.

The present chapter moves beyond irritability to create two new measures of male depression, the Male Symptoms Scale (MSS) and Gender Inclusive Depression Scale (GIDS). These new depression measures are distinctive in that they include

comprehensive list of symptoms assumed to be characteristic of male depression. Specifically, these male depression measures include such symptoms as anger attacks, alcohol and substance abuse, acting out, and social withdrawal in addition to the traditional depression symptoms. The design of these two scales was based upon a review of the current literature on men and depression and includes findings from two types of studies. The first type of study identifies depression in men using typical measures (e.g., the Beck Depression Inventory), and then assesses the presence of additional symptoms (e.g., anger or irritability). The second type of study includes measures that incorporate non-traditional symptoms as a way to identify male-specific type of depression. A review of the development and findings of the existing empirical evidence are presented below.

Several studies of the first type have assessed males' experiences of depression and found evidence that men's depressive episodes include symptoms other than those assessed by DSM criteria for Major Depressive Episode. Winkler, Pjrek, and Kasper (2005) conducted a study in 217 depressed patients (104 females, 113 males) to investigate whether anger, irritability, and aggression play a role in the symptomology of depression. The patients in this study were diagnosed with Major Depressive Disorder by a clinician and treated in an inpatient unit at the Department of General Psychiatry at the University of Vienna between 2000 and 2002. The authors found that male patients with depression scored significantly higher on irritability, were more prone to overreact to minor annoyances, suffered from anger attacks (sudden spells of anger and aggression with physical features similar to panic attacks), had lower impulse control, greater

substance use, and experienced more hyperactive behavior compared to the depressed female patients.

Newman, Fuqua, Gray, and Simpson conducted two studies that investigated the relationship between anger and depression (1999; 2006). The first study was conducted using an undergraduate university sample and the second consisted of an adult clinical sample. The Beck Depression Index (BDI), (Beck, et al., 1961) and the State Trait Anger Expression Inventory (STAXI) (Spielberger, et al., 1983) were used in both studies. The STAXI measures five dimensions of anger including intensity of angry feelings, propensity to express anger without provocation, frequency of anger suppression, anger outbursts directed at other people, and how often a person tries to control their angry outbursts. The university study consisted of a sample of 395 undergraduate students (226 women and 169 men). The authors found that women had significantly higher scores on the Beck Depression Inventory and that there were no sex differences on any of the mean scores of the anger scales. They also found that all dimensions of the anger scales were significantly correlated with depression for both men and women and found that the anger scales explained 38% of the variance of depression in a hierarchical regression model. The second study surveyed 134 people (65 men and 74 women) who were seeking mental health services at a clinic in the southwestern United States. The researchers did not limit the sample by requiring the presence of any specific diagnoses or symptoms. In this second study the authors also found no gender differences in either the mean scores of the anger scales or depression scores. The study found that all five components of anger were significantly correlated with depression. A hierarchical

regression analysis revealed that 38% of the variance of depression was explained by the five anger scales.

Upon conclusion of the two studies, the authors stated that anger is an important component of depression that should be examined and measured in patients. Although neither study found that anger was more closely related to depression in men, the authors proposed that these findings will have a greater impact on the diagnosis of men with depression than women. They state that although both sexes may experience anger at similar rates, women may be more likely to present classic depression symptoms to a clinician, while men may be more likely to present anger and frustration. They speculate that anger may be a more natural expression of psychological distress among men than depression and that the man may not even be aware of their underlying depression, while he is more readily aware of his anger and willing to report that. The author's statements are based on findings from gender role studies that propose men are more likely to express anger than classic depression symptoms such as hopelessness or crying, rather than any of their own empirical findings. Their own findings actually provide no support for this speculation, as they found that anger was not significantly related to gender in any way. The idea that men's relationship with anger and depression will be more important in making a clinical diagnosis makes intuitive sense, but to date there have been mixed results from empirical studies. Winkler et al. found that men with depression scored higher on irritability and had more anger attacks, while Newman et al. found similar relationships between depression and anger for men and women. Further study is needed in this area before any definitive conclusions can be drawn.

The Gotland Male Depression Scale (GMDS) is a measure developed to

specifically assess male depression. The GMDS was developed by psychiatrists secondarily as a result of a study of suicide in Sweden. These researchers had noticed that interventions designed at increasing general practitioner's ability to recognize depression in their patients as a way of decreasing the suicide rate was effective for women but not men. They speculated that men's experience of depression might not manifest itself according to traditional symptoms and developed a scale designed to identify alternative symptoms assumed to be more characteristic of the way depression might be expressed by men. The GMDS was originally validated using a sample of men currently in treatment for substance abuse. Since the original study, the GMDS has been used in a variety of settings, including clinical samples of men, clinical samples including men and women, and community samples (Chu et al., 2009; Magovcevic & Addis, 2008; Möller-Leimkühler et al., 2004a; Winkler et al., 2005). It has been translated and validated for use in China (Chu et al., 2009) and formed the basis of at least one other measure of male depression, the Male Depression Questionnaire (2005).

The results from the two studies that validated the GMDS are summarized below. Zierau, Bille, Rutz, and Bech (2002) investigated the GMDS by assessing its internal consistency and the external validity of the questions with an established measure of depression, the Major Depression Inventory. Study participants responded to three measures, the GMDS, the Major Depression Inventory (which assesses depression using the DSM-IV symptoms), and the WHO (Five) Well-being Scale. The authors used two criteria to evaluate the validity of the measure, internal consistency among the GMDS items and external validity assessed by inter-correlations between the GMDS, MDI, and WHO (Five) Well-being Scale. First, the authors compared the number of cases

identified as depressed by the GMDS to the number of patients identified as depressed by using the MDI. The Major Depression Inventory classified 17% (N=15) of the sample as having major depression; the GMDS classified an additional 22% (N = 39) of the men as depressed. The authors did not report the level of agreement between the two measures, only the correlation between the two scales. Regarding internal validity, the authors report that the GMDS had a Cronbach alpha of 0.86 (acceptable coefficients range from 0.7 – 0.9) which was on par with the internal consistency of the MDI (0.85). The GMDS was also positively correlated with the MDI (0.77) and was negatively correlated with the WHO (five) Well-being scale (-.70), which was consistent with the author's hypothesis.

A second study of the GMDS was conducted on a clinical sample of 2,411 patients (656 men and 1755 women) admitted to the Psychiatric Hospital of the University of Munich for depression using ICD-9 criteria to test whether the GMDS could differentiate between male and female depressed patients (Möller-Leimkühler et al., 2004a). The authors found that the scale did not differentiate between male and female depression patients. Males did not endorse any of the proposed "male" symptoms such as irritability or anger to a greater degree than females. The researchers conducted three sets of factor analyses, the first on the total sample, and one each for male and female respondents. All three factor analyses resulted in a five factor solution. For females, the first two factors included typical depression symptoms such as tiredness, loss of vitality, sleep problems, depressed mood, complaintiveness, and restlessness. For males, the first two factors were comprised of mainly atypical symptoms including: abusive behavior, irritability, antisocial behavior, and aggressiveness. Therefore, while the GMDS did not result in a greater percentage of men meeting the new criteria for depression, the factor analysis

suggested that the underlying structure of depression may be different for men compared to women.

While the GMDS is widely cited and used, some researchers have argued that there are methodological concerns that may limit its usefulness (Magovcevic & Addis, 2008). These limitations include the fact that it was validated using a small sample (89) and the fact that study only included males. Thus, there is little evidence that the scale itself is a better predictor of depression in men as opposed to women. The scale can also be critiqued for the wordiness of the items and the fact that several items include "double-barreled" questions. Several items also contain statements that are not complete sentences. For example, item nine from the GMDS states, "Overconsumption of alcohol and pills in order to achieve a calming and relaxing effect. Being hyperactive or blowing off steam while working hard and restlessly, jogging, or other exercises, under or over-eating." This single item includes an assessment of at least five separate constructs – substance use, hyperactivity, working hard or restlessly, over-exercising, and changes in appetite. Therefore, while this study is important to the field because it is the first to propose a male depression scale that contains the alternative symptoms suggested by the clinical and popular literature, it does not provide very convincing evidence that these are the definitive items that should be used for detecting depression in men.

The second measure designed to identify a male-type of depression is the Masculine Depression Scale (MDS), developed by Magovcevic and Addis (2008). The MDS is a self-report scale designed to capture the alternative male symptoms of depression proposed by the literature. The MDS underwent a more transparent and scientifically rigorous development process than what has been published on the GMDS.

This process included a literature review, development of an initial list of items, followed by a review of those items by a panel of graduate students who were part of the research team developing the MDS. After their review several items were reworded and several new items were added to the scale based upon their recommendations. At this point, the items were sent to five experts for review. These experts were chosen for their work and publications on men and depression or for having a reputation as a clinician particularly skilled in working with depressed men. The items that met consensus approval by the expert panel were retained in the final version of the MDS which contains 58-items.

The 16 symptom areas in the MDS include: (1) anger, aggression, irritability; (2) substance abuse; (3) withdrawal from family/social interactions; (4) over-focus on work/school; (5) blunting of affect; (6) inability or unwillingness to experience/express soft emotions; (7) loss of interest in succeeding; (8) aches and pains; (9) change in sexual desire; (10) stress intolerance; (11) difficulty with decision making; (12) need for autonomy/self-reliance; (13) worries about future; (14) self-criticism/sense of failure/ineffectualness; (15) externalizing/blaming; and (16) burden/disillusionment. The authors examined the psychometric properties of the MDS using a sample of 102 men who were at risk for depression. A man was considered to be at risk for depression if he had experienced a recent stressful life event within the last three months. Half of the participants were recruited at the YMCA of the Greater Boston Area and half were currently seeking mental health treatment at a community health center and were recruited by their provider or the study Principal Investigators. The participants completed self-report measures assessing traditional depression, conformity to masculine norms, and the author's newly created measure of masculine depression. The measures

used included the Beck Depression Inventory (BDI) and the Conformity to Masculine Norms Inventory (CMNI), a self-report inventory that assesses the extent to which men conform to masculine norms (Mahalik et al., 2003). Factor analysis of the MDS resulted in a two factor solution, one representing internalizing symptoms, and one consisting of externalizing symptoms. The externalizing symptoms were moderately correlated with measures of depression and masculine norm adherence. The internalizing symptoms were strongly correlated with traditional depression, but were unrelated to masculine norm adherence. Regarding symptom endorsement, men who strongly adhered to masculine norms reported more externalizing symptoms than internalizing symptoms.

The results of this study are important for two reasons. First, the MDS did find evidence of an alternative masculine assessment of depression. Men who scored high on masculine norms adherence were equally likely to endorse internalizing and externalizing MDS items, but were less likely to endorse traditional depression items, as measured by the BDI. In order to make men more comfortable with endorsing these items, the questions were stated in a way that did not threaten the men or make them feel more vulnerable. For example, when assessing uncertainty or difficulty making decisions, traditional measures of depression often ask, “Were you unable to make up your mind about things you ordinarily have no trouble deciding about?” Hegemonic masculinity ideals demand that men be decisive and confident. The above question asks a man to admit indecisiveness which is a stereotypically feminine trait. However, indecisiveness can still be assessed in men, if the phrasing of the item is changed. In the MDS, the item is worded, “I don’t feel as confident about my decisions.” This allows a man to evaluate the quality of his decisions rather than his ability to make a decision. The second

important finding from this study is the link between masculinity and the externalizing alternative depression items. The authors were able to demonstrate that masculinity, rather than sex, was an important predictor of reporting externalizing symptoms.

The study also contained several limitations. First, the authors deliberately chose to examine the psychometric properties of their scale with a sample exclusively made up of men. They felt that in order to truly define a masculine-type of depression they should only assess men. However, the authors do themselves a disservice by not including women in their sample. They included measures of masculinity and gender role conformity to examine if it was in fact a relationship between masculinity that would lead men to endorse these alternative symptoms, and not simply sex. Including women and measuring their gender role conformity would have allowed the authors to present a more nuanced argument. They would have been able to investigate if there are women who present with a masculine-type depression. It is highly probable that some women would meet this masculine-depression profile. If the authors wish to identify items that seek to make the current measurement of depression more valid they should have included a sample of both men and women.

A second limitation is that the study did not attempt to identify cases of depressed men with their measure. The authors investigated the psychometric properties of the scale, and reported the mean scores of all measures used, but they did not provide any guidelines on how the scale scores should be interpreted. A third limitation of the MDS is that several of its symptoms seem to be measuring aspects of masculinity rather than symptoms. For example, “need for autonomy/self-reliance” is often included as an example of values ascribed to hegemonic masculinity. It may be that many men who are

not depressed would endorse such an item. Two of the criteria for assessing depression are that: (1) there has to be a change in behavior and (2) that the symptoms are causing the person significant impairment in their daily lives. Stating that one is self-reliant or values autonomy does not automatically make them impaired and it could very well be a stable trait that the person has always exhibited rather than a recent change. However, if a person determined that their need for autonomy limited their ability to acknowledge a problem such as depression, then it may be considered a symptom. Items that seek to measure the alternative expression of depression in men need to be carefully worded to avoid this situation.

STUDY DESCRIPTION

The study uses one branch of the National Institute of Mental Health Collaborative Psychiatric Epidemiology Surveys (CPES), the National Comorbidity Survey Replication, NCS-R. The full survey was described in Chapter Three. The current analysis describes the creation of two scales designed to measure Male Depression in a national sample of adults in the United States. The first scale is the Male Symptoms Scale (MSS) and the second scale is the Gender Inclusive Depression Scale (GIDS). A two-part process was employed to create the two scales. First the author conducted an extensive literature review to construct a list of alternative “male-type” depression symptoms. Second, this list of proposed symptoms was compared against the NCS-R questionnaire and dataset to determine whether appropriate variables capturing the desired symptoms could be identified.

The literature review process to develop these two scales relied on a review of the proposed symptoms identified by the clinical and empirical literature. Regarding the

empirical evidence reviewed, the author relied heavily on three empirical papers: (1) the constructs assessed by the GMDS (Zierau et al., 2002), (2) the findings from Winkler that suggested depressed men exhibit risk-taking behavior and hyperactivity (Winkler et al., 2005), and (3) the symptoms assessed in the Masculine Depression Scale (Magovcevic & Addis, 2008). An initial list of 28 symptoms was identified and they are listed in Table 4.1.

The second step in the scale development process was to identify items in the NCS-R dataset that measured the proposed list of symptoms. As the present analysis is a secondary analysis of existing data, the exact items used in these other three studies were not available. Symptoms were not included in the scales for one of three reasons. First, several items that the literature suggests should have been part of one or both of the scales were not included due to the limitations of the existing data. For example, both the Gotland Male Depression Scale and the Masculine Depression Scale include measures of over-exercising, but an equivalent item could not be found in the NCS-R questionnaire. Second, several items were excluded even when data were available because of the placement of the item within the NCS-R questionnaire structure. The NCS-R questionnaire was structured in such a way that all people were asked the screening questions, and if they answered yes, they were asked follow-up questions. Several items, such as gambling behavior and changes in sexual behavior were only asked within one of these deeper subsections of the interview and too few people answered them for it to be useful to include those questions in the present analysis.

The third reason for not measuring symptoms proposed by the literature was because the symptoms were not actually a symptom. For example, one item of the

GMDS, hereditary loading, was not included in the construction of the two scales even though an equivalent question was available in the NCS-R. The decision not to include this item was made because it is inappropriate to consider having a family history of depression a symptom. It is well-known that family history is a *risk factor* in developing depression; that having depression in a family's history places people at greater risk. However, the purpose of these scales is to assess the presence of symptoms and family history is not a symptom that a person might experience; rather, it is a part of their genetic makeup and therefore has no place on the list of possible symptoms. Finally, one of the criticisms of the GMDS was that the questions are poorly worded and combined several questions into one. In the present study efforts were made so that constructs that were grouped together into one question in the GMDS were kept as separate items in the development of these scales. Detailed descriptions of the two scales are provided in the following two sections.

DESCRIPTIONS OF THE MALE SYMPTOMS SCALE AND GENDER INCLUSIVE DEPRESSION SCALE

The first scale developed for the present analysis is the Male Symptoms Scale (MSS). It contains symptoms that have been proposed as alternative symptoms of depression in men. The scale consists of 13 items assessing the following constructs: (1) irritability, (2) anger/aggression, (3) sleep disturbance, (4) alcohol/drug abuse, (5) risk-taking behavior, (6) hyperactivity, (7) feeling tense, and (8) loss of interest. These symptoms were chosen after a review of the literature and an examination of available items in the NCS-R data. Three of the symptoms, sleep disturbance, restlessness, and loss of interest, are assessed in traditional measures of depression, but they are not items

that are traditionally considered feminine traits. In summary there are 8 symptoms, three of them are part of traditional depression criteria. However, these three are more gender-neutral and therefore are included in the MSS scale. Example items for each construct are: (1) “Have you ever had a period lasting several days or longer when most of the time you were very irritable, grumpy, or in a bad mood?” (2) “Have you ever had attacks of anger when all of a sudden you lost control and threatened to hit or hurt someone?” (3) “How often do you have trouble getting to sleep or staying asleep – nearly all the time, pretty often, not very much, or never?” (4) “Did you ever use alcohol or drugs so much that it often interfered with your responsibilities at work, at school, or at home?” (5) “Did you ever seek pleasure by doing risky things?” (6) “Did you ever have a time when you felt more excited, had more energy, or felt more restless than usual?” (7) “During the past 30 days, how often did you feel tense or keyed up?” (8) “Have you ever had a period lasting several days or longer when you lost interest in most things you usually enjoy like work, hobbies, and personal relationships?”

The second scale designed to assess male depression is the Gender Inclusive Depression Scale (GIDS). The GIDS is a 24-item scale that includes all of the MSS items as well as 10 additional items that measure more traditional symptoms of depression including: sad mood, loss of vitality, tiredness, ambivalence, anxiety/uneasiness, and complaintiveness (feeling pathetic). The details for scoring the scales are described in detail in the methods section. Table 4.1 contains a list of symptoms suggested by the literature and also identifies whether that item was included in the present analysis. It also indicates whether the symptoms are part of the Gotland Male Depression Scale, the Masculine Depression Scale, or the traditional diagnosis of

Major Depressive Episode. For items that were not included in either the MSS or the GIDS a rationale for their exclusion is provided. As mentioned earlier, there were three reasons a suggested item was not included: (1) “Not a Symptom” indicates that the symptom was deemed inappropriate to the current analysis, (2) “Not Available” indicates that there were no variables in the dataset that measured the symptom, or (3) “Item Inaccessible” indicates that an item did exist in the questionnaire, but the number of people for whom data was available for a symptom was too small to be useful for the analysis (too small being less than 250 people).

HYPOTHESES

The goals of these analyses are: (1) to create two scales that measure symptoms of male depression, the MSS and the GIDS, (2) to assess sex differences in symptom endorsement of the MSS and GIDS, (3) use multivariate logistic regression models to identify the predictors of GIDS and MSS, (4) to determine if the addition of these symptoms decreases the sex ratio of female to male depression, and (5) to compare the prevalence of depression as measured by three scales, the two measures of Male Depression, the MSS, GIDS, and DSM Major Depressive Episode (MDE).

The following hypotheses will be tested:

(H1) Male Depression as measured by the MSS will be more prevalent among men than women. The prevalence of Male Depression as measured by the GIDS will result in no gender differences.

The first hypothesis proposes different outcomes for the two newly constructed measures, the MSS and the GIDS. The goal of the MSS is to include a list of symptoms that depressed men would be more willing to admit to *in the place of* traditional

depression symptoms. It is based on the literature showing that men are more prone to irritability, hyperactivity, violence, and somatic symptoms (energy loss and sleep issues) (Winkler et al., 2005; Shiels et al., 2004; Newman et al., 2006). While it is possible that some women will endorse these atypical male-type symptoms, if the MSS truly captures male depression, then depression should be more prevalent among men than women. Therefore, I propose that the MSS will identify more male cases of depression than female cases.

In contrast to the MSS, the GIDS takes a different approach. The GIDS combines the male-type symptoms of the MSS with several traditional symptoms of depression. Thus, the GIDS is designed to be inclusive of both traditional and male-specific symptoms of depression. Ultimately this dissertation argues that male depression is not a separate disorder from Major Depression. In order to assess depression in men an expansion of the criteria is needed that reflects men's experiences. The GIDS is designed to be a scale of that nature, one that will assess depression in both men and women. If it accomplishes its goal, then it will identify an equal number of depression cases across the sexes.

(H2) Male Depression will be more prevalent than MDE among men.

The second hypothesis is an expansion of hypothesis one, and states that including alternative symptoms will identify more cases of depressed men than the traditional algorithm used for identifying cases of Major Depressive Episode. This hypothesis will be tested for both the MSS and the GIDS. If the two scales are better at detecting depression in men, then they should find more cases than the algorithm currently used that identifies MDE cases using DSM-IV-TR criteria. This hypothesis is consistent with

those investigated by other studies assessing male depression. When Zierau et al. (2002) validated the GMDS; they found that it identified an additional 22% of their sample as depressed compared to the percentage of cases identified by the Beck Inventory of Depression. Their finding sets precedence for the expectation of the hypothesis.

(H3) Men will endorse the non-traditional symptoms with greater frequency than women.

The third hypothesis investigates whether there are sex differences among the specific items that have been added as alternative expression of depression. There have been conflicting findings from the literature regarding this hypothesis. For example, Moller-Leimkuller et al. used the GMDS with a clinical sample of men and women and found no differences in the percent endorsement of items between the sexes. Winkler et al., found that male patients with depression scored significantly higher on irritability, were more prone to overreact to minor annoyances, suffered from anger attacks (sudden spells of anger and aggression with physical features similar to panic attacks), had lower impulse control, greater substance use, and experienced more hyperactive behavior compared to the depressed female patients. The findings from Chapter Three found that men and women endorsed irritability at similar rates. Although the results have been mixed, the hypothesis being tested in this analysis is that men will endorse the alternative symptoms more than women.

(H4) Poorer job functioning will be a significant predictor of male depression for men, but not for women.

The fourth hypothesis is based on findings from previous work of Shiels, Gabbay, Dowrick, and Hulbert (2004) who found that depressed men were more likely to be

dissatisfied in their work than men who were not depressed. Disruption in work, namely an over-involvement or obsession with work, is a common theme reported among those authors and researchers who propose alternative male depression. Pollack, Cochran and Rabinowitz, Diamond, and Kantor all suggest that therapists evaluating men for depression should look for changes or disruptions in work. Several of these authors also state that problems in work performance are one of the main motivating factors that drive men to seek help. They hypothesize that this phenomenon is related to masculinity and the importance of the male role as “provider.” Performing well at work is one way in which men measure their self-worth and functionality. If men with depression are performing well at work, they can rationalize that any emotional problems are not serious enough to affect their work; therefore, they are not serious enough to deal with by seeing a professional. However, when emotional problems start to negatively affect work performance a man may be ready to seek help and directly face these issues. Therefore, given the central importance of work to many male’s identity, hypothesis four predicts that work problems will be a significant predictor of Male Depression for men, but not for women.

METHODS

SAMPLE DESCRIPTION & SCREENING CRITERIA

The sample size was determined by the construction of the MSS and GIDS. The NCS-R questions were divided into two sections. Part I, administered to all 9,282 respondents included the core WMH-CIDI disorders. Part II was administered to 5,692 of the original respondents and included assessments of additional disorders that were identified by the authors to be of secondary importance, risk factors, consequences,

services, and other correlates of the core disorders. Most of the items used to create the MSS and GIDS come from Part I questions. However, several items including the questions assessing stress were in Part II of the NCS-R questionnaire. Therefore, the sample size for these analyses is 5,692. Table 4.2 provides the demographic characteristics of the sample used in this chapter. The sample was made up of significantly more women, 58.5% (3,310) women compared to 41.5% (2,382) men. The average age of respondents was 45.2 years, 73.4% of the sample was non-Hispanic White, and more than half (51.6%) of the sample had some education beyond high school. The mean household income was \$59,575. Men's mean and median incomes are both significantly higher than women's. The mean income for men was \$63,365 compared to \$49,327 for women and the median income was \$53,500 for men compared to \$44,000 for women.

CONSTRUCTION OF THE MALE DEPRESSION SCALES ALGORITHMS

To construct the MSS and GIDS scales an index was created which added one point for each item endorsed in the scale. MSS Scores range from 0 – 13 and GIDS scores range from 0 – 24. Caseness for each scale was defined as having a score of 5 or greater.

STATISTICAL ANALYSIS

All statistical analysis was done using STATA 10.0 SE version (StataCorp, 2007). Due to the sampling methods used in the data collection it is necessary to use the complex survey data methods in the STATA statistical package to correctly calculate the standard errors. The CPES sample design used weighting and clustering, requiring all statistical analyses to be carried out using the Taylor series linearization method, which is

the default when using the STATA “svy” commands. Bivariate analyses were conducted to examine sex differences in symptom endorsement for each Male Depression symptom. Statistical significance was evaluated using two-sided design-based 0.05 level tests. Multivariate logistic regression models were run to identify predictors of MSS and GIDS, calculating the odds ratios (ORs) of having Male Depression when key demographic predictors are considered. Exploratory factor analysis was completed to see if there were any sex differences in the factor loadings of items from the scale.

RESULTS

The results section is divided into three parts. Part I summarizes the results of the analyses performed with the MSS. Part II summarizes the GIDS results. Part III compares the two measures to each other and to traditional Major Depressive Episode cases. An overview of the factor analysis results is provided at the end of the results section, while the full results are available in Appendix One.

PART I – EVALUATION OF THE MSS

Table 4.3 summarizes the results of the MSS. The prevalence of Male Depression using the MSS was 23.8%, and the mean score was 6.06. While there was no difference between men and women’s mean scores on the MSS, there was a significant difference in the prevalence of Male Depression as assessed by the MSS, with 26.3% of men meeting case criteria compared to 21.9% of women. There were also sex differences with respect to the endorsement of the specific items comprising the MSS. Table 4.3 also shows that men endorsed several items at significantly higher rates than women: anger attacks/aggression (95% of men compared to 89% of women), substance use (61% of men compared to 41% of women), and risk-taking behavior (53% of men and 29% of

women). Women endorsed four symptoms at significantly greater rates than men: stress (75% of women compared to 63% of men), irritability (75% of women compared to 63% of men), sleep problems (47% of women compared to 29% of men), and loss of interest (92% of women compared to 88% of men). These included all of the symptoms that are traditionally associated with depression plus irritability.

Logistic regression was completed to determine which sociodemographic characteristics were significant predictors of Male Depression using the MSS. Three models were run, one with sex as a predictor, one restricted the sample to men and the third on women. The stratified analyses were run because sex was found to be a significant predictor of Male Depression. There were increased odds of meeting case criteria for men (OR 1.3). This significant result led to asking the question of whether the predictors of Male Depression would be different for men and women. In linear models this could be tested by the inclusion of an interaction term (e.g. sex*social support), but that is not as easily done in logistic regression analysis when results are reported as either coefficients or odds ratios (Norton et al., 2004). Therefore, stratifying the models by sex allowed exploration of how the predictors of Male Depression differed for men and women. The regression results are summarized in Table 4.4. Men had greater odds of meeting caseness criteria (OR 1.3, $p < .001$). Age was a significant predictor of caseness for both men and women (OR 0.972, $p < .001$). Younger adults are at greater risk of meeting case criteria than older adults. There was only one significant race/ethnicity finding; Hispanic men had significantly decreased odds of MSS caseness (OR .529, $p < .001$) compared to non-Hispanic White males. Divorced men had significantly increased odds of meeting case criteria, compared to men who had never married (OR

2.04, $p < .05$). Among women, marital status was not significant. For men, the highest level of education (4-years of college or more) decreased the odds of meeting Male Depression case criteria (OR 0.421, $p < .001$) compared to men who did not graduate from high school. Impaired social support and impaired job function both significantly increased the odds of meeting MSS caseness for both sexes.

PART II – EVALUATION OF THE GIDS

Table 4.5 summarizes both the prevalence and mean scores of the GIDS. For respondents meeting case criteria for male depression as assessed by the GIDS, the mean scores for this scale were 8.8 for men and 8.9 for women, which are not significantly different. There was also no sex difference in the prevalence of GIDS caseness. Looking at the individual symptoms within the GIDS, men endorsed several items at significantly greater percentages than women: anger attacks/aggression (56% of men compared to 42% of women), substance use (24% of men compared to 10% of women), risk-taking behavior (21% of men and 8% of women), and hyperactivity (19% of men compared to 14% of women). Women endorsed six symptoms at significantly greater rates than men: stress (39% of women compared to 31% of men), indecisiveness (34% of women compared to 28% of men), anxiety (51% of women compared to 42% of men), sleep disturbance (13% of women compared to 8% of men), depressed mood (64% of women compared to 60% of men) and complaintiveness (12% of women compared to 8% of men). There were no sex differences in the percent endorsement of irritability, loss of vitality, feeling tired, or social withdrawal. Examining the top five highest endorsed symptoms reveals similar patterns for men and women. Depressed mood was the number

one symptom for both men and women, with anger attacks/aggression, stress, irritability, and anxiety/uneasiness rounding out the rest of the top five symptoms.

Logistic regression analysis was run to examine predictors of Male Depression when using the GIDS to determine caseness. Three models were run, one with sex as a predictor, one restricted the sample to men and the third on women only. The regression results are summarized in Table 4.6. Sex was not a significant predictor of GIDS Male Depression. Age was a significant predictor of caseness for both men and women (OR 0.986, $p < .01$). Younger adults are at greater risk of meeting case criteria than older adults. Regarding race and ethnicity, Black women had decreased odds of meeting case criteria (OR .599, $p < .05$). Being divorced increased the odds of Male Depression for women, (OR 1.87, $p < .01$), compared to women who never married. For men marital status was not significant. Finally, as was seen with the MSS analysis, impaired social support and impaired job function both significantly increased the odds of meeting caseness for Male Depression for both sexes

PART III – COMPARISON OF THE DEPRESSION SCALES

This section compares the prevalence depression when it is assessed by three different measures, traditional depression using the MDE criteria and the two measures of Male Depression GIDS and MSS. Table 4.7 illustrates the prevalence rates of depression when assessed by the three different measures. When depression is assessed by the MSS, an additional 582 unique cases are identified. Cases are considered unique if they met MSS case criteria, and were not classified as depressed by MDE criteria. When these cases are added to the MDE cases the prevalence rate of depression increases from 31.6% to 41.8%. When depression is assessed by the GIDS, an additional 912 unique cases are

identified. When these cases are added to the MDE cases the prevalence rate of depression increases from 31.6% to 47.6%. The addition of MSS and GIDS cases decreases the sex ratio, but there are still significant differences, with more women than men meeting depression criteria.

RESULTS OF HYPOTHESES

Earlier, five hypotheses were proposed regarding the prevalence of Male Depression and symptom endorsement differences by sex. Hypothesis 1 stated that Male Depression will be more prevalent among men than women when assessed by the MSS. This hypothesis was supported, men had a prevalence of 26.3% compared to women, who had a prevalence of 21.9%, and these differences were statistically significant. The second part of hypothesis one was also confirmed, as there were no significant differences in the prevalence of Male Depression when assessed by GIDS. Hypothesis 2 stated that Male Depression will be more prevalent than MDE among men. This hypothesis was supported regardless of which of the two scales were used to determine caseness, as seen in Table 4.7. MDE had a prevalence of 25.3%; Male Depression was present in 26.3% of men when assessed by the MSS and in 30.7% of men when assessed by the GIDS. Interestingly, this was not true for women; a larger percentage of women met MDE caseness (36%) than MSS (21.9%) or GIDS (33.3%). Hypothesis 3 stated that men will endorse the non-traditional symptoms with greater frequency women. The results for this hypothesis are mixed. The MSS results demonstrated that men significantly endorsed substance use, anger attacks/regression and risk-taking behavior. On the GIDS, men endorsed anger/aggression substance use, risk-taking behavior, and hyperactivity more than women. Irritability was an alternative symptom proposed by the

literature that was endorsed at a high rate, but it was endorsed equally by both men and women. The fourth and final hypothesis stated that poor job function would be a significant predictor of Male Depression for men, but not for women. This hypothesis was not fully supported, as poorer job function significantly increased the odds of meeting Male Depression case criteria using both the MSS and MDS for both men and women.

FACTOR ANALYSIS

The two scales developed to assess Male Depression were created for this analysis and a set of exploratory factor analyses were run on each scale. The results of these analyses are available in Appendix One. Regarding the Male Symptoms Scale, the most interesting finding was that a two factor solution emerged for men but a single factor solution emerged for women. For men, the two factor solution accounted for approximately 44% of total variance, while for women the one-factor solution accounted for only 31% of the variance. The first factor for men contained almost all of the constructs, irritability, anger attacks/aggression, substance use, loss of interest, risk-taking behavior, and hyperactivity. The second factor contained stress and sleep problems, along with loss of interest and irritability (these two constructs loaded on both factors). Regarding the Gender Inclusive Depression Scale, a four factor solution was determined for both men and women. Factors one and two were similar across men and women, while factor four for men and factor three for women were similar, consisting of anger/aggression, alcohol and drug abuse, and risky behavior for men and women.

DISCUSSION

This is the first study to operationalize the alternative symptoms of a male-type depression in a nationally representative sample of US adults. The results indicate that there are symptoms depressed men experience and that if these symptoms are included in the diagnostic criteria, more men will meet depression criteria. While men are likely to endorse many traditional depression symptoms, men were significantly more likely to report symptoms of anger/aggression, irritability, substance use, and risk-taking behaviors over symptoms such as withdrawal from friends, sleep problems, and feeling of complaintiveness. These results suggest that while many men will experience traditional symptoms, there are other clues to their condition that professionals should assess.

In this study, the prevalence of Male Depression was measured by two scales. The MSS consisted of alternative symptoms suggested by the literature as well as traditional symptoms that are not stereotypically associated with femininity. The MSS found that Male Depression was more prevalent among men than women, and more prevalent among men than MDE. This is an extremely important finding, as it is the first scale to report a higher prevalence of depression in men than in women. The MSS also found that men endorsed non-traditional symptoms at significantly higher rates than women did, including anger attacks/aggression, substance use, and risk-taking behavior. These results provide support for the hypotheses proposed at the beginning of the analysis as well as those in the literature. Specifically, men experience depressive symptoms that differ from those assessed by the current diagnostic criteria. Additionally, by including these symptoms more male depression cases were identified than the traditional criteria. Therefore, from these results it is clear that these symptoms are ones

that men experience in significant numbers and that they are willing to disclose the presence of these symptoms. This is important, because in the literature it is proposed that men will experience traditional depression symptoms, but are unwilling to disclose that fact. This suggests that many men with depression remain undetected, because, while they will endorse some symptoms, they do not endorse enough to meet the case criteria threshold. Therefore, expanding the criteria to include these symptoms increases the likelihood that men will endorse enough symptoms to meet case criteria.

Regarding the logistic regression results, the fact that men had increased odds of meeting case criteria (OR 1.3) provides further support that these symptoms do indeed capture a uniquely male set of symptoms. Impaired social support, impaired job function, and age all significantly increased the odds of meeting MSS caseness for both sexes. These findings are consistent with the fact that depression is a highly debilitating disorder that affects a person's daily functioning, including their performance at work and social relationships. Regarding age, younger adults are at greater risk of meeting case criteria than older adults. This finding was consistent with those from previous studies in the literature, which shows that the median age of onset for a mood disorder is 25 – 32 years (Kessler et al., 2005).

There was only one significant race/ethnicity finding, that Hispanic men had significantly decreased odds of MSS caseness (OR .529, $p < .001$) compared to non-Hispanic White males. In the present study, race and ethnicity differences regarding the MSS were not explored. This finding is consistent with the prevalence of Major Depressive Disorder in the NCS-R which found that Hispanics had lower rates compared to non-Hispanic Whites (Riolo, Nguyen, Greden, & King, 2005). Recent research has

demonstrated that different patterns exist among Latino groups, including varying rates of depression. Mexican men were less likely to have a history of depressive disorders compared to their Puerto Rican counterparts (Alegria et al., 2007). The same study also demonstrated that Latinos had a lower rate of psychiatric disorders compared to the NCS-R estimates of English speaking Latinos (Alegria et al., 2007). These results suggest that further analyses to explore the effects of race are warranted.

Divorced men had significantly increased odds of meeting case criteria, compared to men who had never married (OR 2.04, $p < .05$). This is consistent with expectations, as the literature suggests that trouble in personal relationships is an indicator that men are depressed. As this study used cross-sectional data, it is difficult to know the temporal relationship between divorce and depression, was the depression partly responsible the deterioration of the marriage, or, did the divorce precede the depression. Other depression studies have also reported that divorce is a significant predictor of depression, although gender differences in the effects of divorce are not always reported (Riolo et al., 2005; Kessler et al., 2005). For men, the highest level of education (4-years of college or more) decreased the odds of Male Depression compared to men who did not graduate from high school, and this too is consistent with other findings (Riolo et al., 2005; R. C. Kessler et al., 2005).

While the dependent variable for this analysis was “male depression” ultimately, the goal of the dissertation was to identify the ways in which men experience depression that are different from the current way depression is diagnosed. Therefore, the next step of the analysis was to take these alternative symptoms and combine them with the more traditional symptoms of depression to produce a measure that would be equally adept at

detecting depression in men and women. This was the motivation for developing the GIDS.

The second scale, the GIDS, included both traditional depression items as well as the alternative items from the MSS. Similar to the MSS results, the GIDS identified more depression in men than MDE, (30.6%). This rate is also higher than the number of depressed men identified with the MSS. The most important finding was that the GIDS found that men and women met case criteria for depression in equal proportions. This is a remarkable finding, as it suggests that when the alternative male depression symptoms are combined with traditional symptoms, the prevalence of depression is equal across the sexes. This finding is similar to that of Moller-Leimkuler et al. (2004) who found similar mean scores using the Gotland Male Depression Scale with a clinical in-patient sample. However, the current analysis is the first to replicate these findings in a community-based sample.

Consistent with the MSS results, men endorsed the alternative symptoms in significantly greater numbers than women, including anger attacks/aggression, substance use, risk-taking behavior, and hyperactivity. Earlier in this section, I argued that the alternative symptoms allow more men to cross the threshold of case criteria. The MSS could be considered a minimum scale; it would do a good job at detecting depression in men, as it is comprised of male-specific and gender neutral items. However, from the literature we know that men's experiences of depression are not uniform. For some men, these alternative symptoms would be enough to assess depression, while others will experience the more traditional symptoms of depression. Therefore, a scale such as the GIDS is more comprehensive and better reflects the heterogeneity of the depression

experience. Further, the results show that creating a comprehensive measure does identify the largest number of cases.

The logistic regression results for the GIDS analysis were very similar to MSS results. Being younger, having poor social support and problems with job performance all significantly increased the odds of depression for men and women. Interestingly, being divorced in the GIDS analysis significantly increased the odds of depression for women, but not men, which is the opposite of what was seen in the MSS results. This unexpected finding might have to do with the problem of using cross-sectional data. It is possible that divorce has a differential impact on men and women's depression, perhaps preceding divorce for men and after divorce for women. Further study of the temporal relationship between divorce and depression is needed to gain a better understanding of these results. Regarding race and ethnicity, being Hispanic again reduced the odds of meeting case criteria for depression. For women, being Black reduced the odds of meeting case criteria for depression compared to non-Hispanic White women and this is consistent with other findings in the literature (Kessler et al., 2005).

Ultimately, the results of this work have the potential to bring significant advances in the field of how we perceive and measure depression in men. These findings could lead to important changes in the way depression is conceptualized and measured. The goal of this analysis was to identify the ways in which men experience depression that are different from the current way depression is diagnosed. The current depression diagnostic criteria may be biased to detect feminine while excluding masculine experiences of depression. Gender is likely to play an important role in how men and women conceptualize and experiences depression. Therefore, creating measures that are

adept at addressing these differences are needed. This work provides evidence that depressed men endorse both conventional and alternative symptoms. The factor analysis revealed interesting sex differences regarding the underlying structure of depression. The MSS factor analysis revealed a single solution for women, but a two-factor solution for men. There was also an interesting difference between the sexes in the amount of variance explained by the model. These alternative male depression symptoms only explained about 30% of the variance for women, but explained 44% of the variance for men. This suggests that for women, the traditional depression symptoms, such as feelings of sadness, worthlessness, ambivalence, etc. appear to be necessary to explain a significantly large proportion of the variance. This does not mean that men will not experience the other symptoms that women do, results showed that that a large proportion of men do report those symptoms, however almost half of their variance can be explained by these symptoms alone. Therefore, this does suggest that asking about these symptoms of irritability, anger, alcohol/drug use, and risk behaviors is important when assessing depression in men and their presence alone may be enough to determine a diagnosis of depression in men.

LIMITATIONS

Despite the significant findings reported in this study, several important limitations exist and should be noted. First of all, while the two scales that were assessed in the present study support the notion of a male specific depression, neither of them is an ideal measure. This study was limited by the fact that it had to construct scales from multiple parts of an existing study. Therefore, not all constructs that have been put forth in the literature could be included. For example, many authors have proposed that

depressed men's behavior will change in a way that they become singularly focused on other tasks to try and alleviate their emotional pain. Commonly this is reported as overworking, over-exercising, or a change in sexual behavior. These symptoms, along with other risky behaviors such as gambling, could not be assessed in the current study. While a few questions regarding job performance, exercise, and gambling were asked none of them were sufficient to assess link that act to a change in behavior due to an emotional condition.

In addition, several of the constructs that were included were imperfect for this study. For example the items assessing taking chances/doing reckless things was not put into the context of relating it to an emotional condition, as currently worded it could just be more of a personality trait. However, it was still included because it was the best item available and it is known that risky behavior and taking chances is a risk factor for suicide behavior. Future studies should include items that assess these other behaviors.

One of the largest limitations of the current study was its lack of measurement of masculinity. The findings by Magovcevic and Addis (2008) suggest that masculinity and not sex alone are important when using alternative male-type symptoms in depression measures. All of the analyses and findings presented here are sex differences and not gender differences. This is quite disappointing, because it may not truly be sex differences that were found, but gender differences that are linked to masculinity and femininity which would ideally be included in the measurement. The literature that has looked at masculinity has found that it is important in explaining the sex findings. Often, when masculinity is measured it explains more variance in depression than sex alone (Magovcevic & Addis, 2005, 2008; Mansfield, Addis, & Courtenay, 2005; Mansfield,

Addis, & Mahalik, 2003). Therefore, future studies trying to understand the differences between men and women in the diagnosis of depression should include measures that attempt to understand how masculinity and femininity are influencing depression rates, not relying on sex alone as an indicator.

CONCLUSION

It is appropriate to include these male behaviors in the realm of depression because as the analysis has shown, there are often important symptoms that are not currently being assessed as part of the depression screening process. Whether the inclusion of these items will bring more men into treatment or not we will have to wait and see. If asked directly about the presence of these symptoms men and women respond with similar rates. Many of the cases meeting caseness for Male Depression also meet caseness for MDE, suggesting that the two conditions are related. However, adding these symptoms also categorizes up to an additional ten percent of men as being depressed. More study is needed to determine what symptoms men and women choose to divulge of their own free will when choosing to seek treatment. It may be the case that if men are asked directly about the presence of hopelessness and depression they will acknowledge its existence, but use different words to communicate the presence of these emotions. Instead of readily volunteering that they are depressed, men might instead speak of feeling stress, anger, and irritability. Therefore, it is important that these other symptoms become part of the diagnostic criteria so that if a man does present with them the clinician is able to connect the man's experiences to a diagnosis of depression.

These findings of symptom prevalence are limited in that the methodological procedures do not truly represent a clinical interview. These types of psychiatric

epidemiologic surveys do not allow us to ask the respondent to rate which symptoms are the most debilitating, or which they experience the most in their daily lives. It is very possible that while men would acknowledge feeling tired, it is the constant presence of irritability that he or others find the most damaging to his life and relationships. Future study is needed to further clarify which symptoms truly describe men's experiences of depression. This study suggests that asking about irritability, anger, and substance use are important to assess when evaluating depression in men.

CHAPTER FOUR TABLES AND FIGURES

TABLE 4.1: MALE DEPRESSION SYMPTOMS

Items Included	Scales Developed for the Dissertation					
	Major Depressive Episode	Gotland Male Depression Scale	Masculine Depression Scale	Literature	Male Symptoms Scale	Gender Inclusive Depression Scale
Stress		X	X	X	X	X
Irritability		X	X	X	X	X
Anger attacks/ Aggression		X	X	X	X	X
Loss of vitality/ Emptiness	X	X				X
Tiredness/Weak	X	X		X		X
Indecisiveness	X	X	X			X
Sleep Problems	X	X		X	X	X
Anxiety/Uneasiness		X	X	X		X
Alcohol/Drug Abuse		X	X	X	X	X
Social Withdrawal	X	X	X	X		X
Depressed Mood	X					X
Loss of Interest	X		X	X	X	X
Complaintiveness	X	X	X			X
Risk-Taking Behavior				X	X	X
Hyperactivity		X		X	X	X
						Rationale for Not Including Items*
Hereditary Loading		X				Not a Symptom
Appetite Change	X	X				Item Inaccessible
Loss of Self-Confidence	X			X		Item Inaccessible
Suicidal Thoughts	X			X		Item Inaccessible
Over-Focus						
Work/School		X	X	X		Not Available
Blunted Affect				X		Not Available
Over-Exercising		X	X			Not Available
Lack of Emotional Display			X	X		Not Available
Aches and Pains			X	X		Not Available
Change in Sexual Desire			X	X		Not Available
Need for Autonomy			X	X		Not Available
Externalizing Rationale			X	X		Not Available
Feeling Overburdened			X	X		Not Available

* “Not a Symptom” indicates that the symptom was deemed inappropriate to the current analysis.

“Not Available” indicates that there were no variables in the dataset that measured the symptom

“Item Inaccessible” indicates that an item existed, but the number of people for whom data was available would have severely restricted the sample size.

Table 4.2: Male Depression Sample Demographic Characteristics

	Total N=5,692	Male N= 2,382	Female N= 3,310
Age (Mean)	45.23	44.3	46.0
18-24	14.63	7.0	7.63
25-34	15.96	7.3	8.7
35-44	21.07	10.0	11.0
45-54	19.63	9.03	10.6
55-64	12.11	5.4	6.7
65+	16.6	6.6	10.0
Race/Ethnicity			
Non-Hispanic white	73.44	34.2	39.2
Non-Hispanic black	11.1	4.4	6.7
Hispanic	10.6	4.8	5.5
Other	5.1	2.0	3.1
Education			
Less than high school (0-11 Years)	15.97	7.6	8.37
Completed high school (12 Years)	32.46	14.3	18.2
Some college (13-15 Years)	27.2	11.7	15.4
College Degree or Higher (16+ Years)	24.4	11.8	12.7
Marital Status			
Never Married	22.4	10.9	22.4*
Married	56.7	28.5	28.2
Separated/Widowed/Divorced	20.9	5.9	15.02*
HH Income			
Median	\$47,500	\$53,500*	\$44,000
Mean	\$59,575	\$63,365	\$49,327
\$0 - \$14,999	15.8	5.2	10.6*
\$15,000 - \$34,999	21.1	8.7	12.4*
\$35,000 - \$74, 999	33.9	16.6	17.3
\$75,000+	29.2	15.0	14.3

Note: * $p \leq 0.05$

TABLE 4.3: MALE SYMPTOMS SCALE RESULTS: ITEM ENDORSEMENT, MEAN SCORE, AND PREVALENCE OF MALE DEPRESSION

Item Description	Total % (SE)	Male % (SE)	Female % (SE)
Stress	68.9 (1.6)	63.3 (1.9)	75.2 (2.4)***
Irritability	90.3 (1.4)	86.6 (1.9)	94.7 (1.9)***
Anger attack/Aggression	92.05 (1.2)	94.85 (1.9)***	88.94 (1.4)
Sleep Problems	37.7 (1.5)	29.2 (2.1)	47.1 (1.9)***
Alcohol/Drug Abuse	51.6 (1.9)	61.4 (3.0)***	40.6 (1.9)
Loss of Interest	89.7 (.973)	87.8 (1.5)	91.8 (1.0)*
Risk-Taking Behavior	41.6 (1.5)	52.7 (2.0)***	29.1 (2)
Hyperactivity	57.9 (1.4)	57.6 (2.1)	58.4 (1.8)
Mean score	6.06	6.05	6.07
Prevalence	23.8%	26.3%**	21.9%

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

TABLE 4.4: MALE SYMPTOMS SCALE RESULTS: PREDICTORS OF MAJOR DEPRESSION

	Full Model OR (95% CI)	Stratified: Male OR (95% CI)	Stratified: Female OR (95% CI)
Sex			
Male	1.3 (1.04 – 1.50)**		
Female	1.0		
Age	.972 (.963 – .982)***	.976 (.963 – .988)***	.969 (.958 – .981)***
Race/ethnicity			
Non-Hispanic White	1.0	1.0	1.0
Non-Hispanic Black	.769 (.521 – 1.13)	.697 (.296 – 1.16)	.798 (.492 – 1.29)
Hispanic	.723 (.464 – 1.12)	.529 (.299 - .953)*	1.07 (.585 – 1.97)
Other	1.4 (.811 – 2.28)	1.57 (.706 – 3.17)	1.21 (.632 – 2.35)
Education, y			
0 – 11	1.0	1.0	1.0
12	1.01 (.662 – 1.54)	1.09 (.557 – 1.86)	.987 (.493 – 1.76)
13 – 15	.923 (.615 – 1.39)	.846 (.489 – 1.29)	1.02 (.490 – 1.87)
16+	.490 (.330 - .726)***	.421 (.249 - .713)***	.588 (.263 – 1.02)
Marital Status			
Married/Cohabiting	.952 (.643 – 1.41)	1.10 (.607 – 1.82)	.773 (.437 - .981)
Divorced	1.40 (.848 – 2.31)	2.04 (1.01 – 4.11)*	1.01 (.511 – 1.50)
Never Married	1.0	1.0	1.0
Employment Status			
Employed	0.935 (.400 – 2.18)	1.51 (.522 – 4.12)	.458 (.176 – 1.19)
Unemployed	1.00 (.235 – 4.26)	1.04 (.438 – 1.45)	1.88 (.232 – 15.2)
Not in labor force	1.0	1.0	1.0
Household Income			
< \$15,000	1.0	1.0	1.0
\$15,000 - \$34,999	.875 (.539 – 1.42)	.603 (.303 – 1.26)	1.14 (.611 – 2.02)
\$35,000 - \$74,999	1.10 (.704 – 1.72)	.826 (.436 – 1.52)	1.38 (.754 – 2.39)
\$75,000+	.990 (.604 – 1.62)	.807 (.389 – 1.63)	1.19 (.632 – 2.05)
Social Support	1.09 (1.04 – 1.14)*	1.07 (1.02 – 1.13)*	1.12 (1.05 – 1.20)***
Job Function	1.20 (1.16 – 1.24)***	1.21 (1.13 – 1.28)***	1.21 (1.16 – 1.26)***

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

TABLE 4.5: GENDER INCLUSIVE DEPRESSION SCALE RESULTS: ITEM ENDORSEMENT, MEAN SCORE, AND PREVALENCE OF MALE DEPRESSION PREVALENCE

Item Description	Total % (SE)	Male % (SE)	Female % (SE)
Stress	35.5 (1.48)	30.9 (2.05)	39.2 (1.72)***
Irritability	33.6 (1.18)	32.5 (2.08)	34.5 (1.09)
Anger attack/Aggression	48.7 (1.87)	56.5 (2.71)***	42.4 (1.99)
Loss of Vitality/Emptiness	17.2 (.689)	16.8 (1.03)	17.4 (.843)
Tiredness	20.5 (1.05)	21.1 (1.27)	20.0 (1.50)
Indecisiveness	31.2 (1.17)	27.6 (1.51)	34.1 (1.3)***
Sleep Problems	10.3 (.509)	8.18 (.671)	12.1 (.770)***
Anxiety/Uneasiness	46.9 (1.5)	41.6 (2.09)	51.3 (1.86)***
Alcohol/Drug Abuse	17.05 (.856)	24.6 (1.52)***	10.8 (.829)
Social Withdrawal	7 (.633)	7.3 (.826)	6.75 (.686)
Depressed Mood	62.5 (1.44)	60.1 (1.97)	64.4 (1.72)***
Complaintiveness	10.3 (.509)	8.2 (.671)	12.1 (.770)***
Risk-Taking Behavior	14.02 (.919)	21.1 (1.18)***	8.1 (.955)
Hyperactivity	16.63 (.8)	19.3 (1.4)***	14.4 (.714)
Mean score	8.8	8.8	8.9
Prevalence	32.3%	30.6%	33.3

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

TABLE 4.6: GENDER INCLUSIVE DEPRESSION SCALE RESULTS: PREDICTORS OF MALE DEPRESSION

	Full Model OR (95% CI)	Stratified: Male OR (95% CI)	Stratified: Female OR (95% CI)
Sex			
Male	0.850 (.675 – 1.07)		
Female	1.0		
Age	.986 (.977 – .996)**	.987 (.973 – 1.00)*	.986 (.975 – 1.09)**
Race/ethnicity			
Non-Hispanic White	1.0	1.0	1.0
Non-Hispanic Black	.664 (.364 - .854)**	.731(.385 – 1.38)	.599 (.379 -.948)*
Hispanic	.709 (.446 – 1.11)	.566 (.331 – .963)*	.874(.538 – 1.41)
Other	1.22 (.647 – 1.80)	1.16 (.544 – 2.49)	1.28 (.738 – 2.23)
Education, y			
0 – 11	1.0	1.0	1.0
12	.857 (.567 – 1.30)	.955(.493 – 1.85)	.756 (.458 – 1.25)
13 – 15	.856 (.587 – 1.25)	.856 (.496 – 1.48)	.817 (.477 – 1.94)
16+	.702 (.526 – 1.17)*	.649 (.406 – 1.03)	.727 (.382 – 1.66)
Marital Status			
Married/Cohabiting	1.00 (.787 – 1.91)	.994 (.707 – 1.39)	.989 (.577 – 1.67)
Divorced	1.60 (1.13 – 2.25)**	1.24 (.671 – 2.29)	1.87 (1.15 – 3.03)**
Never Married	1.0	1.0	1.0
Employment Status			
Employed	1.0	1.0	1.0
Unemployed	0.528 (.201 – 1.38)	.360 (.037 – 3.51)	.630 (.232 – 6.17)
Not in labor force	1.54 (.735 – 3.21)	1.32 (.417 – 4.21)	1.74 (.567 – 3.89)
Household Income			
< \$15,000	1.0	1.0	1.0
\$15,000 - \$34,999	1.13 (.683 – 1.88)	1.24 (.597 – 2.57)	1.12 (.441 – 1.90)
\$35,000 - \$74,999	1.09 (.645 – 1.84)	1.10 (.507 – 2.41)	1.20 (.419 – 1.42)
\$75,000+	.970 (.582 – 1.61)	1.18 (.533 – 2.60)	.867 (.253 – 1.05)
Social Support	1.03 (1.01 – 1.09)*	1.02 (.966 – 1.08)*	1.04 (1.01 – 1.15)*
Job Function	1.11 (1.08 – 1.14)**	1.10 (1.04 – 1.317)***	1.12 (1.08 – 1.16)***

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 4.7: Comparison of the Prevalence of Depression

	Major Depressive Episode	Male Symptoms Scale	Alternative Male Depression Scale	Male Symptoms Scale + Major Depressive Episode	Alternative Male Depression Scale + Major Depressive Episode
Total	31.6%	23.8%	32.2%	41.8%	47.6%
Male	25.3%	26.3%	30.6%	38.5%	43.6%
Female	36.0%	21.9%	33.3%	44.1%	50.4%
F:M	1.4***	0.83**	1.09	1.1*	1.2*

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

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Chapter 5: CONCLUSION

This dissertation explored men's experiences of depression to investigate why and how they might be different from the way depression is assessed and measured by current standards as represented by the Diagnostic and Statistical Manual (American Psychiatric Association, 2000). In this final chapter the major arguments and findings from each of the previous chapters will be reviewed. Following that is a discussion of the limitations of the current work. The final section of this chapter discusses the implications of the findings of the dissertation. The chapter concludes with recommendations for future research projects necessary for generating the scientific evidence needed to make progress on this issue.

This work investigates the disparity between men and women in the prevalence of depression using a gender and health framework. For years data on the prevalence of depression has reported that women are affected at approximately twice the rate of men. This finding regarding the sex ratio has been replicated in almost every setting including large community studies conducted in the West (Bebbington, 1998; Kessler & et al., 1993; Meltzer et al., 1995; Wolk & Weissman, 1995). Much of the research aimed at reducing this disparity approached the problem by assuming that the difference in prevalence could be explained by women's increased vulnerability to depression. During this time being male was viewed as a protective factor against depression (Diamond, 2005). This dissertation contributes to a growing body of work that approaches the

problem from a different point of view. Rather than focusing on women, it has been suggested by many (including researchers, clinicians, and the American Psychological Association) that the difference may in fact be explained by a failure in our measures to detect depression in men.

A review of the literature suggests that men are missed in the current research estimates for two reasons. First, men may be underreporting their depression symptoms in measures of self-report. Second, men may experience depression differently and as a result, exhibit symptoms that are not included in the current diagnostic criteria. Both of these explanations are related to the idea that men's health and health behaviors are influenced by social forces. As introduced in Chapter One, lessons from the women's health movement provide an example of how social perceptions of illness contribute to the underdetection of illness among the sexes. For years, heart disease was thought to be a male disease and this led to an underdiagnosis and lack of recognition of how fatal heart disease is for women. Most of the research and diagnostic tools for detecting heart disease came from studies that excluded women in the samples. It took many years of careful research to discover that while women's presentation of heart disease was different from men's, they were in fact suffering and dying from heart disease at much higher rates than previously thought (McSweeney et al., 2003). The medical and public health communities learned an important lesson from these data and launched a successful national campaign to educate women about their risk of heart disease and how to recognize the symptoms. The mental health community could learn from the gendered history of heart disease as it mirrors what is happening with men and depression. Until recently, research investigating sex differences in prevalence of depression has taken a

one-sided view that tried to explain women's increased risk for depression. Men were ignored. This dissertation views the past's exclusive focus on women as a mistake. A more gender-balanced view requires research that focuses on understanding the expression and under-detection of depression among men.

Chapter two reviewed the literature to explore how depression is a gendered illness, one that is biased against men. The literature review concluded that men are less likely to exhibit traditional symptoms of depression in self-report measures and clinical encounters. However, it also stated the importance of recognizing the ways men do display and cope with emotional pain so that support and resources can be provided to help them. Traditionally, men's behaviors and masculinity have both been thought of as normal and neutral with little discussion on how men's behavior and the health risks associated with those behaviors are potentially problematic. These practices may have left clinicians and researchers ill-prepared at recognizing when men are asking for help, because they are not doing it in ways that are currently recognized in either clinical settings or research. This is an important point to understand because in order to meet the diagnostic criteria for depression, an act of self-disclosure is required. This act may be more difficult for men than women. In short, cultural notions of what it means to be a man are interacting with the diagnostic criteria in a way that limits the opportunities for depressed men to express their depression.

Hegemonic masculinity values self-determination, maintain control over one's emotions and other life domains, strength, and stoicism. These values are at odds with admitting emotional distress and may leave depressed men unwilling or unable to admit to or recognize their own depression. For some men it is not that they do not experience

dysphoria or the other symptoms of depression; rather, they may be reluctant to tell someone about their deep sadness because doing so would be admitting to a weakness or a failure. This leaves many men without an acceptable vocabulary with which to express their feelings or describe their experiences.

The second part of Chapter Two reviewed the literature (both popular and empirical) to identify the ways in which men are willing to express their depression. These alternative expressions of depression in men include withdrawal from family and friends, increased irritability, aggression, and anger, functional impairment in relationships and employment, somatically based emotional complaints, and physical agitation. The literature is actually quite clear and comprehensive in its description of what depression looks like in men. However, the claims made in this literature are not supported by empirical evidence. Instead the books rely on case studies and self-purported clinical expertise. Empirical studies, such as this dissertation, are needed to provide stronger evidence. It is not surprising, with this lack of evidence, that current diagnostic measures and criteria have failed to comprehensively consider these alternative symptoms. Chapter Two concluded by stating that it is time to investigate the impact of including symptoms that reflect the unique way men may experience depression in current diagnostic and case-finding measures.

Chapters Three and Four are the two empirical analyses included in the dissertation. Both empirical chapters examine what happens to the prevalence rates of depression when these proposed alternative symptoms are included in the diagnostic criteria.

SUMMARY OF RESULTS

Chapter Three focused on an analysis of Irritable Depression (ID), a proposed construct modeled after Major Depressive Episode. ID substitutes irritability for dysphoria as the core required symptom needed to justify a more comprehensive inquiry of related depressive symptoms. The literature review in Chapter Two suggested that irritability is an important symptom of depression that men are willing to disclose. The analysis in Chapter Three found Irritable Depression was present in 5.8% of the sample. As with Major Depressive Disorder, the prevalence was greater for women than men, 6.5% for women compared to 5.0% for men. Men and women meeting the case criteria for Irritable Depression reported very similar symptom profiles. There were no sex differences in the appraisal of the severity of ID; 36% of the sample categorized their ID as severe to very severe. The findings suggest that Irritable Depression is not a prevalent condition. There was a large overlap of cases (52%) who met criteria for both Irritable Depression and Major Depressive Episode. Therefore, one of the most important conclusions from the analysis is that irritability is a prevalent symptom of depression that both men and women are willing to acknowledge.

The main hypothesis of Chapter Three was not supported. Including irritability in the assessment of depression did not reduce the male-female difference in depression. However, it did identify irritability as an important component of depression that men are willing to endorse. Including irritability in the diagnostic criteria for depression is one change that should be implemented, but it became clear that irritability alone was not going to reduce the difference in prevalence rates between men and women. Women were more likely to meet case criteria for Irritable Depression than men because women

endorsed irritability at similar rates as men. Irritability is only one symptom, and since a minimum of five symptoms is needed for diagnosis, irritability *alone* was not enough to significantly affect men's rates of depression. The results presented in Chapter Three are clearly inconsistent with the literature promoting irritability as a key symptom in the investigation of gender differences in depression. Therefore, further review of the literature and identification of additional male-type depressive symptoms was needed. Chapter Four explored more directly the other alternative symptoms of male depression proposed by the literature.

Chapter Four assessed Male Depression using two newly constructed measures, the Male Symptoms Scale (MSS) and the Gender Inclusive Depression Scale (GIDS), which consisted of alternative symptoms such as anger attacks, alcohol and substance abuse, acting out, and social withdrawal in addition to the traditional depression symptoms. The prevalence of Male Depression among men was 26.3% when assessed by the MSS and 30.6% when assessed by the GIDS. Male Depression was more prevalent among men in the MSS analysis, but there was no significant difference in the prevalence rates in the GIDS analysis. Regarding symptom endorsement, men did indeed endorse most of the alternative symptoms more than women. Men reported higher rates of anger attacks/aggression, substance use, and risk-taking compared to women, regardless of which scale was used.

It is important to note the major difference between the two scales. The MSS was the shorter scale, designed to include symptoms that are more likely to be endorsed by men, symptoms considered "alternative" or "male-type" expressions of depression. The higher prevalence rates of men found when using the MSS suggest that these symptoms

are in fact describing a type of depression that better represents males than females. The second scale, the GIDS, included these symptoms as well as the more traditional (i.e., DSM) depression symptoms. The GIDS found that men and women met case criteria for depression in equal proportions. This is one of the most significant findings of the dissertation, as it suggests that when the alternative male depression symptoms are combined with traditional symptoms, the prevalence of depression is equal across the sexes. This finding is similar to that of Moller-Leimkuler et al. (2004) who found similar mean scores using the Gotland Male Depression Scale with a clinical in-patient sample. However, the current analysis is the first to replicate these findings in a community-based sample.

The results are consistent with the literature arguing that men experience depressive symptoms that differ from those assessed by the current diagnostic criteria. While men are likely to endorse many traditional depression symptoms, men were significantly more likely to report symptoms of anger/aggression, irritability, substance use, and risk-taking behaviors over symptoms such as withdrawal from friends, sleep problems, and feeling of complaintiveness. For years researchers and clinicians have asked men to use language that discloses emotional vulnerabilities they may not be comfortable expressing in order to meet criteria for depression. Professionals only had the means to diagnose men who volunteered that they had feelings of sadness, loss of vitality, withdrawal, and guilt. However, most men do not express those emotions easily, let alone share those emotions with others. Now that the results have been reviewed the remaining sections of this chapter focus on the implications of this research.

One interesting finding that differed between Chapters Three and Four was the percent endorsement of irritability. In Chapter Three, although a high percentage of women endorsed irritability, it was endorsed more frequently by men. In Chapter Four, more women than men endorsed irritability. This is surprising because including irritability was proposed to be one of the symptoms that would help to equalize the depression rates between men and women. One explanation could be the difference in the sample used in the two chapters. A second explanation is that the item assessing irritability was slightly vague and left a great deal of interpretation to the respondent to decide if the term applied to them. It is likely that irritability means different things to men and women. Irritability is often associated with women, in relation to PMS symptoms. In fact, many ad campaigns for medication aimed at addressing PMS symptoms on television list irritability as a symptom. Therefore it is not surprising that many women end up endorsing the construct. For men however, irritability may actually be acting as a proxy for a stronger emotion, anger. Remember that while men endorsed irritability less than women, they consistently endorsed anger at greater rates than women.

Anger is an interesting construct for two reasons. On the one hand, anger is one of the few emotions that is not at odds with masculinity. It is in fact a masculine display of emotion and many women actively suppress feelings of anger, as seen in the study by (Kopper & Epperson, 1996). On the other hand, our society is often wary of the expression of anger and associates it with violence. Therefore, while it is more acceptable for men to display their anger, those who do so run the risk of being condemned as possibly violent. However, compared to anger or anger attacks, asking

about irritability is rather benign. After reviewing the results of both chapters I believe that the PI's who hoped to investigate irritable depression could actually have been interested in an anger-driven depression rather than irritability. The results in Chapter Four suggest that anger and not irritability is important when trying to assess depression in men.

LIMITATIONS

There were several limitations of the current analyses. First, it relies on self-reported cross-sectional data. The questions in Chapter Three ask respondents to think about the presence of symptoms and disorders in the past, either over the last 12 months or over the course of their lifetime, not in their current state. This introduces issues such as poor recall or perhaps a lack of willingness to report having these problems. With the survey instruments constructed in Chapter Four, the questions were put together from multiple sections of the interview. Therefore, the time frame that the questions asked about was not always consistent. Several questions asked about the presence of symptoms over the last 12-months, while others asked about their presence over the last month. This also represents a significant problem, as there is no guarantee that the respondent had all of the symptoms they endorsed during the same episode.

The issue of self-report is very important in making psychiatric diagnoses. Self-disclosure about the presence of symptoms is the main foundation upon which clinicians and epidemiologists make judgments about the presence or absence of a mental disorder. A clinician has much more leeway than survey interviewers in making diagnostic judgments because clinicians can observe body language and ask follow-up probing questions to illicit more information. However, community (non-clinical) epidemiologic

samples assesses the presence of disorders such as depression by transforming the DSM diagnostic criteria into questions or a checklist of symptoms, including the instrument used in the current analysis, the Composite International Diagnostic Interview Version 3.0 (CIDI 3.0). One criticism of the epidemiologic methodological approach is that it counts the number of endorsed symptoms without collecting information on the *context* in which the symptoms occur (Horwitz & Wakefield, 2007). Critics argue that this approach can result in false-positives and inflated prevalence estimates (Horwitz & Wakefield, 2007).

As an attempt to answer this charge, concordance studies have been done to identify the percent agreement between the CIDI and clinical estimates of mental disorders. The clinical assessments use a structured clinical interview, such as the Structured Clinical Interview for DSM-IV Axis I Disorders: Clinical Version (SCID). The screening questions (diagnostic stem questions) are quite similar between the SCID and the CIDI. Therefore, the distinction in assessing cases depends on two differences: (1) differences in the ability to detect an endorsement of a stem question (the CIDI must rely on yes/no responses, while the SCID allows questions that are more open-ended and probing) and (2) differences in symptom endorsement based on structured questions (CIDI) or questions asked in a more conversational style (SCID).

The diagnostic concordance between epidemiologic assessments of caseness and clinical reappraisals made in community studies is modest, but acceptable (Beals et al., 2004). One study combined the NCS-R data with data from the European Study of the Epidemiology of Mental Disorders (ESEMeD) and investigated the concordance between the CIDI and the SCID (Haro et al., 2006). The authors found that 55% of the Major

Depression cases identified by the SCID were also identified by the CIDI. Perhaps more importantly, looking at the percent agreement in the opposite direction showed that 74% of the Major Depression cases identified by the CIDI were confirmed by the SCID (Haro et al., 2006). In contrast to the argument put forth by Horwitz and Wakefield, these results actually suggested that the SCID and not the CIDI produced higher prevalence estimates. While the SCID results might worry those who feel that prevalence estimates are already inflated, they could in fact be doing a better job than that CIDI at identifying cases.

As argued earlier, self-report may be more problematic when trying to detect depression in men. To my knowledge, none of the concordance studies has investigated gender differences in the percent agreement between clinical interviewing and self-report questionnaires. Therefore, while 74% agreement sounds reasonable it would be important to learn if that rate differed for men and women. Perhaps the cases identified by the SCID included more males, because it allowed for more subtle probing and clinical judgment to elicit symptom endorsement from men than is provided in the CIDI. This would be an interesting analysis to do in the future.

Operationalizing diagnostic criteria is a challenge which psychiatric epidemiology has not completely solved. In truth, it is difficult (if not impossible) to approximate clinical judgment with a highly structured survey questionnaire. The language used to illicit information becomes as critical to the process as which symptoms to assess. What is done with the information obtained from these symptom checklists is an even more important part of the disorder assessment process. For instance, a clinician could decide to continue to ask probing questions to elicit a positive endorsement while a layperson

administering the CIDI must move on as soon as a negative response is given by the respondent. This disconnect between clinical appraisal and survey data collection is a problem that will continue to be tackled by those interested in psychiatric epidemiology for many years.

The development of the two scales in Chapter Four was limited further due to the fact that not all constructs that have been put forth in the literature could be included. For example, many authors have proposed that depressed men's behavior will change in a way that they become extremely focused on tasks to try to alleviate their emotional pain. Commonly this is reported as overworking, over-exercising, or a change in sexual behavior. These symptoms, along with other risky behaviors such as gambling, could not be assessed in the current study. While a few questions regarding job performance, exercise, and gambling were asked none of them were sufficient to assess link that act to a change in behavior due to an emotional condition.

The largest limitation of the dissertation was the fact that masculinity was proposed to be a major driving force that shapes men's experiences of depression and it could not be directly measured. All of the analyses and findings are limited to being reported as sex differences and not gender differences. This is quite disappointing, because it may not truly be sex differences that were found, but gender differences that are linked to masculinity and femininity which would ideally be included in the measurement. The literature that has looked at masculinity has found that it is important in explaining the sex findings. Often, when masculinity is measured it explains more variance in depression than sex alone. Often masculinity, and not sex, is the important factor (Magovcevic & Addis, 2005, 2008; Mansfield, Addis, & Courtenay, 2005;

Mansfield, Addis, & Mahalik, 2003). Therefore, future studies trying to understand the differences between men and women in the diagnosis of depression should include measures that attempt to understand how masculinity and femininity are influencing depression rates, not relying on sex alone as an indicator.

IMPLICATIONS

Future iterations of this work should build on the findings here to continue to explore the relationship between gender and depression. The results of this work clearly showed that men are willing to endorse the alternative symptoms and this resulted in more men meeting the new case criteria for depression. Expanding the criteria also demonstrated a reduction or elimination of the sex differences in the prevalence rates of depression. However, simply expanding the depression criteria to include an additional number of symptoms is problematic. If the depression criteria are expanded and the threshold of meeting case criteria remains the same, then soon it would seem that a very large percentage of people could end up meeting case criteria. However, this work also demonstrated that the current depression criteria are inadequate and may be biased to only measure feminine expressions of depression. Therefore, more study is needed to understand how gender affects the experiences and expression of depression. If we truly believe that depression exists and most likely affects men and women at equal rates then we do need to develop measures that are adept at detecting depression in both men and women.

Why is this a worthy goal to work towards? What makes this a disparity worth addressing as opposed to a difference worth simply noting? The answer is tied to the history of the women's health movement which was introduced briefly at the beginning

of the chapter. When the women's health movement formally began in the 1960's and 1970's it had a fairly narrow focus on demanding improved healthcare for women (Nichols, 2000). The earliest fights centered on reproductive health and abortion before expanding into other areas such as the inclusion of women in drug trials. Women had historically been ignored in health research, as it was assumed they had the same health issues as men or that because of their monthly hormonal cycles they were inappropriate research participants. Since that time, research has expanded to include health problems unique to women and to gain an understanding of how health problems are affected by gender.

Today the women's health movement has become institutionalized at the national level with the creation of the NIH Office of Research on Women's Health. In 2005, the NIH reported spending over \$3.5 billion on research related to women's health, while there was no mention of any money spent on men's health (Meryn & Shabsigh, 2009). As health research expands to examine how gender influences the development of illness, health outcomes, and different presentations of disease, room needs to be made for an Office of Research on Men's Health, or perhaps an Office of Research on Gender and Health. Legislation to create an office of men's health, one that would mirror that of women's health has been proposed several times beginning in 2003, but never passed. The most recent version of the bill, HR 2115 – "The Men and Families Act of 2009," was introduced in April 2009. A barrier to the passage of this legislation is that many assume that most healthcare is focused on men's health. However, just as the women's health movement allowed health research to move forward, looking more at the social causes and influences of illness for women, the men's health movement should be afforded the

same resources. Due to the women's health movement, statistics that had always been accepted as fact (such as those regard cardiovascular disease) were re-examined through a different lens. The findings from these studies fundamentally changed healthcare research. The same procedures should be applied to men's health issues.

With regards to the work addressed in this dissertation, instead of accepting that women have more depression and approaching it from a woman's point of view, it is time to reflect and investigate the problem from a different perspective. It may very well turn out that women's depression rates are higher than those of men. However, that conclusion should only be drawn after all of the evidence has been collected. There is support for the argument suggesting that the diagnostic criteria of depression are gender-biased in a way that excludes men from a diagnosis. Therefore, this is an issue that deserves further investigation. A sex difference in the rate of depression is not inherently bad in and of itself; not every health disparity needs to be reduced to zero. What would be unacceptable is if no one investigated all of the plausible explanations for why a disparity exists. Therefore, the goal of designing measures that are equally adept at assessing depression in men and women is not trying to artificially reduce the sex ratio of depression. Rather, such an endeavor ensures that our measures are as valid as possible for both men and women. This is a goal worthy of exploration.

Ultimately this dissertation argues for an expansion of the current Major Depression diagnostic criteria, as it is a necessary step to identify depression in men. There are many who believe that the prevalence rates found using the existing diagnostic criteria are already too broad and would disagree with the idea of expanding them. In their book *The Loss of Sadness – How Psychiatry Transformed Normal Sorrow into*

Depressive Disorder Jerome Wakefield and Alan Horwitz point out that rates of depression have been rising since we first began reporting them using community studies. This is supported by data which shows that the number of people in treatment for depression increased over 300% between 1987 and 1997 (Horwitz & Wakefield, 2007). They argue that many people who are in treatment for depression are actually suffering from normal sadness, which can be quite debilitating especially if it occurs right after a monumental loss. However, Wakefield and Horwitz argue that such a reaction is a normal part of life and not indicative of a mental disorder. The authors propose the current diagnostic criteria for depressive disorder result in an inflated number of cases because they are based on symptom presence alone and do not do an adequate job of addressing the environmental context in which the symptoms are experienced (Horwitz & Wakefield, 2007).

Horwitz and Wakefield do applaud one contextual exclusionary criterion, bereavement, used by the DSM to identify no pathological grief reactions. However, they suggest that there are many other instances similar to bereavement that have no explicit exclusion criteria. As an example, Horwitz and Wakefield describe several situations in which people could react to a specific event (such as the loss of job, or receiving news of a life-threatening illness), in a way that would allow them to meet depression criteria, but which are actually not an indication of abnormal functioning. Regarding the work in this dissertation, Wakefield and Horwitz would argue that adding additional symptoms that men experience is only aggravating the problem of over-pathologizing normal emotion. They are ultimately concerned with the validity of our current notions of depression as an illness. This concern is noteworthy as this

dissertation is also concerned with the validity of the criteria. In order to have an accurate prevalence estimate of depression we have to be confident that our measures are valid. However, it does not mean that validity should result in identifying fewer cases of depression. It is possible that our current conceptualization of depression is problematic not only because it underdetects depression in men, but also that it could be overdetecting depression in men. There is no guarantee that adding male-type symptoms to the DSM definition of Major Depressive Disorder would improve upon diagnostic validity. The manner in which symptoms are judged as indicative of disorder is a validity problem that is applicable to all disorders within the DSM.

In addition to assessing the presence of symptoms perhaps our measures need to do more. Checklists of symptoms may not be enough to differentiate those with a mental disorder from those who do not. Including measures of other psychosocial contexts, such as the amount of social support, appraisal of severity of the illness, and impaired functioning across life domains such as work, home, and interpersonal relationships are some ways epidemiologists have tried to enhance prevalence estimates (Kessler & Wang, 2008). Unfortunately, it is not clear how to integrate the knowledge gleaned from these supportive measures into diagnostic criteria. Part of the problem is that it is often difficult to establish the temporal relationship between the onset of the disorder and the psychosocial problems assessed by these measures. One solution could be to limit the period that is assessed by community surveys, limiting the time frame to the past year and not attempt to establish lifetime prevalence estimates. A second solution could be to fund more longitudinal cohort studies that would follow people over time, but this type of study is extremely burdensome and expensive (Offer et al., 2004).

A third solution is linked to a limitation mentioned earlier, the lack of measurement of gender's affect on depression. If it is true that one's views on masculinity and femininity affect their experience of depression then perhaps prevalence estimates can be enhanced by analyzing the results of the before assessing depression symptoms. It is true that having a long list of symptoms and keeping the diagnostic criteria set at a minimum of 5 symptoms could lead to an overestimation of depression symptoms. However, depending on the results on a measurement of masculinity or femininity, a different list of symptoms could be assessed. Depression is at least partially a socially constructed disease and one's beliefs about what appropriate expressions of emotional disturbance are can influence the likelihood of someone reporting depression symptoms. Therefore, perhaps depression assessment tools can be tailored to include different lists of symptoms for different profiles of patients. While this approach could be useful in many ways and strives to responsibly take into account the interaction between gender and health there are also risks associated to such an approach. It could pigeonhole people into profile groups that did not accurately reflect their experiences. Today's criteria however, do much the same, as they appear to be biased towards feminine expressions of depression.

The goal of improving survey instruments is in part driven by the criticism that they are not thought to be as accurate as assessments made by clinicians. However, relying on clinical judgment to make a diagnosis does not guarantee an elimination of gender bias. In the introduction of DSM-III itself, the manual states that the diagnostic criteria were based on clinical judgment and had not been validated by data. Clinical judgment is essential to psychiatric diagnosis, but there are two easily identified problems

with it. First, one needs to determine whose clinical judgment should be used as the gold standard. There are very few rules or guidelines that can be used to evaluate who has clinical expertise. Does good judgment depend on the number of years of experience a clinician has, or does it depend on type of outcomes they provide for their patients? Too often research that includes an aspect of clinical judgment is vague on the process used to select the various experts. Second, when speaking with clinicians it seems that clinical judgment is a decision-making process that is very adaptive and difficult to describe. Most clinicians will indicate that their expertise in clinical judgment has evolved and developed over the course of their practice. They also state that their decisions depend on a number of factors that they cannot always ascertain until they are face-to-face with a patient. Often, they will not know what the most important relevant questions are to ask until they are asked. Therefore, while clinical judgment is often lauded as the gold standard to which all survey questionnaires must aspire, it is unreasonable to expect psychiatric epidemiologic instruments used in community surveys to achieve such a standard.

With regards to clinical judgment and the current diagnostic criteria, there are two areas where potential gender bias could have been introduced. First is a problem of poor research design, clinical judgment was based on clinical encounters with depressed patients and most of the patients who show up in clinician's offices with depression are women. Due to the fact that women probably constituted most of the depression sample cases upon which the criteria were based, it may be that the DSM depression criteria always reflected the way depression is expressed by women. The task force may have

done a good job of describing what depression looked like in women by basing the criteria on the people who were more likely to visit their practices.

The second potential point at which gender bias influenced the diagnostic criteria is the fact that most of the clinicians writing the diagnostic criteria were men. At the time the criteria were being written there was no such field as Men's Health and men's behavior was considered the standard against what normal was measured. The clinicians were asked to define a disorder and when men were not included in the process it was not because they were being left out intentionally. It may have been that it never crossed the clinicians' minds that they were excluding men and as a result, arriving at a gender biased description of major depression. Trying to explain why most of their patients were women was not part of their agenda; their charge was to create a standardized set of symptoms that accurately reflected a disorder, using observation and of their patients. The bias introduced into the criteria was a result of the procedures used to create them. Empirical testing and validation of the depression criteria to correct this error is an important issue.

In Chapter Two the issues of self-disclosure and its relationship to diagnosis and masculinity was discussed. It was proposed that men with depression are less willing to disclose the symptoms of traditional depression because they are phrased in such a way that forces men to discuss their problems in emotional language. Men are not as comfortable as women in using this type of language and therefore, limiting the depression criteria in this way is biased against men. The symptoms that were added in the MSS and GIDS are symptoms such as irritability, anger outbursts and acts of aggression, substance use, hyperactivity, and distancing oneself from friends and family.

The analysis showed that men endorsed these items and that by including them more men met the threshold level of the five symptoms needed to meet case criteria for depression. Why though should these symptoms be added to classify these men as depressed and not some other disorder?

Ultimately, what is accomplished by identifying the symptoms experienced by men and conceptualizing them as indicators of being depressed? What is gained or what is lost by choosing to expand the construct of mood disorders as opposed to another disorder, such as anxiety disorders, or disorders of impulse control (e.g., Intermittent Explosive Disorder), or Axis II Personality Disorders (e.g., Antisocial Personality Disorder)? The data reported here provide two answers to this question. First, the current criteria can be reworded so that items in traditional measures of depression are asked in a more gender-neutral (or male-sensitive) way. Chapter Four introduced this type of data collection with respect to the symptom of indecisiveness (asking about the quality of recent decisions as opposed to the inability to make a decision). Secondly, while men did endorse the non-traditional symptoms more than women, overall, both sexes had very similar symptom profiles when it came to which symptoms were endorsed the most. The top five symptoms were the same for both men and women.

Some critics may accept that these symptoms identify men in emotional distress, but what is gained by having them adopt the label of depression? The short answer is that we need to be able to identify who needs help before we can help them. Modification and expansion of the diagnostic criteria should not be something to fear, as long as it results in identifying a more accurate pool of people who need treatment. Identifying those who need services and making sure that there are adequate resources to

provide those people with care is the ultimate goal of revising the criteria. However, if more men are correctly diagnosed will that automatically lead to more treatment?

Unfortunately, the answer is probably not. Even when men are diagnosed today using the existing criteria we know that they do not seek treatment at the same rate as women (Kessler et al., 1981; Möller-Leimkühler, 2002). What are the reasons for this? Men who choose not to seek treatment or disclose their problems either see an advantage in remaining silent, or feel that the costs of breaking that silence outweigh the benefits. It is probably the latter, that the costs outweigh the benefits. Men are inclined to remain quiet about their depression because they ultimately feel that there are serious consequences to acknowledging their depression. They will lose status and carry a label for the rest of their lives that will broadcast their diminished capabilities. One of the most debilitating consequences of depression is that it leaves a person feeling hopeless, which often immobilizes them. If men feel that there is not much hope that life would improve with treatment, it is not surprising that they would not seek help. Many men may be unaware that there are successful treatments that can help improve their lives. If it were known that help was available and that there are treatments that allow them to recover from depression and improve the quality of their lives, more men might be willing to acknowledge their depression.

A large part of the underdetection of depression in men could be due to an unwillingness to admit to the presence of depression symptoms. Therefore, if the symptoms are there, but men are not reporting them then perhaps efforts would be better aimed at getting men to disclose those symptoms. I do not think this is the correct approach to take. While I agree that it can be problematic for men to withhold

information about medical conditions it is also unrealistic to think that this will change anytime in the near future. Asking men to completely change their behavior is essentially an attack on masculinity. While aspects of hegemonic masculine values may lead to less than favorable health outcomes, I do not think that much change will be accomplished by attacking masculinity directly. Telling men that their health behaviors are unhealthy and that they need to change will most likely only lead to them becoming defensive and unwilling to change. Masculinity is a large part of a man's identity and to attack it would be to attack the man directly. Instead, by focusing on changing the criteria to include symptoms that men are more comfortable reporting would be a more effective approach. This approach acknowledges and accepts men for who they are and still allows them to get the help they need.

As already mentioned, changing the criteria will not automatically lead to more men getting help for depression. What is needed is a change in the way depression is conceptualized and how messages of masculinity could be used to get more men into treatment, rather than seeing masculinity as a barrier to treatment. Mental health messages can be constructed that use masculinity as a way to influence men to seek treatment. For instance, common messages associated with masculinity demand that men take whatever steps are necessary to maintain their positions of power. In the work environment a man would be likely to attend training seminars if he thought they could advance his career. Therapy sessions could also be described as training sessions. The skills learned could help men to increase their capacity to confront depressive symptoms and maintain family responsibilities. Identifying salient messages of masculinity and using them as ways to get men into treatment will be more constructive than condemning

masculinity for contributing to health problems. In fact, this approach should be applied to more than depression treatments. It is an effective way to improve many of men's health problems.

This dissertation identifies a serious gap in the knowledge of psychiatric epidemiology. Men's experiences of depression are not captured by the current diagnostic criteria and measurement tools. The results of this work can inform and guide the changes needed in the field. Ultimately, this project has the potential to bring significant advances in the field of how we perceive and measure depression in men. Several recommendations for future changes to diagnostic criteria include:

1. Examine the phrasing of existing diagnostic criteria and change the wording to be gender neutral (e.g. indecisiveness).
2. Add symptoms that assess men's experiences of depression. Further study is needed to finalize this list but it most likely includes assessing the presence of substance abuse, anger and aggression, and hyperactivity.
3. Include measures of masculinity and femininity in diagnostic assessments.

In conclusion, what is really needed is a two-wave approach. First, there needs to be a move to re-educate and reframe the depression criteria. The association of depression as a woman's disease needs to be eradicated from the public's minds. Stating this as a goal is easy, accomplishing it will take a great deal of effort. There have already been some efforts to do this with the NIMH's "Real Men. Real Depression." campaign. Other efforts include well-known male sports celebrities such as Terry Bradshaw and Zack Grienke publically disclosing their illnesses. Sports and athletics are often associated with masculinity and having famous male sports role models openly discuss

their experiences of depression could go a long way in helping to de-stigmatize depression in men. Unmasking male depression, through a national dialogue, displays of male depression in popular culture, media messaging, and research are all needed to change public opinion. Getting more men to consider that being diagnosed as depressed is not emasculating will be an important first step in getting more men to report their symptoms and seek help.

Secondly, the diagnostic tools must begin to assess alternative symptoms. Changes need to be made to survey instruments, clinical checklists, and in clinical training and education. It is unlikely that men will just start showing up to clinician's offices just because the diagnostic criteria change. Changing the diagnostic criteria is an important first step in changing how our society conceptualizes depression. Recent campaigns such as Real Men. Real Depression. have already started to try to change public opinion by reframing how men think about depression. Part of that campaign though is an acknowledgement that men experience depression in a different way than women. If this campaign is a success than more men will recognize when they are depressed and seek treatment. However, if the diagnostic criteria are not changed, it will not matter how many men pile into the clinician's office, because without a formal change to the criteria they will not be diagnosed with depression. Changing the criteria first could be more efficient than these public messaging campaigns, because they will not be effective until professionals are better able to identify the men who need help. Once the professional workforce has been re-educated to learn what to look for in men the efforts can move on to trying to change men's attitudes about seeking help by

lessening the stigma of depression for men.

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APPENDIX:

FACTOR ANALYSIS

This appendix presents the results for two sets of Factor Analyses. Exploratory factor analysis was conducted on the MSS and GIDS to explore the underlying factor structures to investigate whether there were any sex differences in the factor loadings.

MSS RESULTS

Principle components analysis (PCA) was used because this is a new scale and the underlying factor structure was unknown. The primary purpose of PCA is to examine each item in the scale to summarize and reduce the items in a scale to those necessary (Rodeghier, 1996). In the factor analysis, only factors with Eigenvalues greater than 1 and factor loadings greater than 0.35 were kept. The factor analysis was run for the sample as a whole, then again, separated by sex. As this scale was the first of its kind to focus almost exclusively on the symptoms thought to better predict depression in men, an exploratory factor analysis was conducted. The Kaiser-Meyer-Olkin (KMO) test is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. The range of values is 0 – 1.0, with large values indicating that a factor analysis of the variables is a good idea. It is generally accepted that values should be greater than 0.5 for a satisfactory factor analysis to be done. The KMO for the MSS items was 0.788, indicating that the items are sufficiently correlated to proceed with the factor analysis. In order to select the number of factors, a

screeplot was generated, as well as examining Eigenvalues (factors with an Eigenvalue greater than 1 were kept, yielding a two factor solution for men, but a single factor solution for women as seen in Table Appendix 1.1. For men, the two factor solution accounted for approximately 44% of total variance, but for women the one-factor solution accounted for only 31.3% of the variance. The first factor for men contained almost all of the constructs, except for stress, and sleep problems. These two exclusively loaded onto the second factor, along with depressed mood and irritability. These are all symptoms that fit with a more traditional depression evaluation of mood, if you accept the findings of Chapter 3 that irritability is an important mood indicator similar to sadness or loss of interest.

GIDS FACTOR ANALYSIS

An exploratory factor analysis of the ADMS revealed different patterns of factor loadings by sex, for results see Table Appendix 1.2. A scree plot and examination of Eigenvalues led to a four factor solution of the fourteen constructs assessed. Factor one was the same for both men and women and included psychological stress, loss of vitality/feelings of emptiness, sleep disturbance, and complaintiveness (feeling pathetic). Factor two was similar for men and women with a few differences. Psychological distress, irritability, anxiety/uneasiness, depressed mood, and feelings of restlessness or high energy were present for both men and women. In addition, men had anger/aggression while ambivalence loaded on this factor for women. Factor three consisted of completely different items for men and women, however factor three for men matched factor four for women exactly. It included tiredness, feelings of ambivalence, and social withdrawal. Factor four for men and factor three for women

were similar, consisting of anger/aggression, alcohol and drug abuse, and risky behavior for men and women. For women, irritability and restless/high energy also loaded on this factor.

TABLE APPENDIX 1.1: MALE SYMPTOMS SCALE RESULTS: FACTOR ANALYSIS

	Factor 1	Factor 2
(a) Males		
Stress		.692
Irritability	.464	.524
Anger attack/Aggression	.562	
Sleep Problems		.746
Alcohol/Drug Abuse	.684	
Loss of Interest	.427	.503
Risk-Taking Behavior	.590	
Hyperactivity	-.511	
Eigenvalue	2.44	1.04
Proportion of explained variance	30.5	13.0
(b) Females		
Stress	.489	
Irritability	.724	
Anger attack/Aggression	.551	
Sleep Problems	.538	
Alcohol/Drug Abuse	.484	
Loss of Interest	.617	
Risk-Taking Behavior	.422	
Hyperactivity	-.596	
Eigenvalue	2.506	
Proportion of explained variance	31.3%	

TABLE APPENDIX 1.2: GENDER INCLUSIVE DEPRESSION SCALE RESULTS: FACTOR ANALYSIS

Symptoms	Factor 1	Factor 2	Factor 3	Factor 4
(a) Males				
Stress	.529	.355		
Irritability		.646		
Anger attack/aggression		.394		.422
Loss of vitality/emptiness	.569			
Tiredness			.699	
Ambivalence (difficulty making decisions)			.631	
Sleep Problems	.954			
Anxiety/uneasiness		.693		
Alcohol/Drug abuse				.658
Antisocial behavior (withdrawal)			.725	
Depressed mood		.715		
Complaintiveness (pathetic)	.954			
Risky Behaviors				.761
High Energy, Restlessness		.557		
Eigenvalue	3.5	1.6	1.4	1.1
Proportion of explained variance	25.21	11.61	10.2	7.73
(b) Females				
Stress	.444	.379		
Irritability		.609	.443	
Anger attack/aggression			.530	
Loss of vitality/emptiness	.591			
Tiredness				.676
Ambivalence (difficulty making decisions)		.407		.600
Sleep Problems	.949			
Anxiety/uneasiness		.653		
Alcohol/Drug abuse			.588	
Antisocial behavior (withdrawal)				.690
Depressed mood		.740		
Complaintiveness (pathetic)	.949			
Risky Behaviors			.722	
High Energy, Restlessness		.392	.491	
Eigenvalue	3.6	1.5	1.3	1.1
Proportion of explained variance	25.9	10.9	9.1	7.6

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ADDITIONAL LOGISTIC REGRESSION RESULTS

This appendix presents the results for three sets of logistic regression analyses. In both Chapters Three and Four logistic regression analyses were conducted to investigate the sociodemographic predictors of the combined depression cases. In all cases, when conventional depression cases were added to the depression cases identified by the ID, MSS, or GIDS algorithms, sex remained an important predictor. Therefore, logistic regression analyses were run to investigate whether this relationship remained significant when other sociodemographic covariates were added to the model. In Chapter Three the dependent variable was depression, measured as those cases meeting case criteria for either ID or MDE and the results are presented in Table Appendix 2.1. In Chapter Four two sets of regression analyses were run, the dependent variable was depression, measured as those cases meeting case criteria for using the MSS or MDE criteria, with the results presented in Table Appendix 2.2. In the second analysis depression was present if a case met the GIDS or MDE criteria, and the results are presented in Table Appendix 2.3. In all three sets of regression analyses sex remained an important predictor of depression.

TABLE APPENDIX 2.3: COMBINED DEPRESSION LOGISTIC REGRESSION
RESULTS:SOCIODEMOGRAPHIC PREDICTORS

	Full Model OR (95% CI)	Stratified: Male OR (95% CI)	Stratified: Female OR (95% CI)
Sex			
Male	1.0	N/A	N/A
Female	1.82 (1.57 - 2.11) **	N/A	N/A
Age	0.98 (0.97 - 0.98) **	0.98 (0.97 - 0.98) **	0.98 (0.97 - 0.98) **
Race/ethnicity			
Non-Hispanic White	1.0	1.0	1.0
Non-Hispanic Black	0.52 (0.37 - 0.71) **	0.49 (0.31 - 0.77) **	0.53 (0.39 - 0.73) **
Hispanic	0.59 (0.51 - 0.69) **	0.60 (0.44 - 0.80) **	0.60 (0.51 - 0.71) **
Other	0.59 (0.49 - 0.71) **	0.69 (0.50 - 0.97) *	0.54 (0.39 - 0.73) **
Education			
0 – 11	1.0	1.0	1.0
12	0.94 (0.78 - 1.13)	0.85 (0.61 - 1.19)	1.00 (0.80 - 1.26)
13 – 15	0.93 (0.79 - 1.11)	0.90 (0.65 - 1.25)	0.96 (0.77 - 1.21)
16+	1.01 (0.82 - 1.24)	0.94(0.59 - 1.50)	1.06 (0.82 - 1.38)
Marital Status			
Married/Cohabitate	1.0	1.0	1.0
Divorced	2.12 (1.82 - 2.46) **	2.55 (1.94 - 3.37) **	1.86 (1.55 - 2.23) **
Never Married	0.97 (0.78 - 1.19)	1.00 (0.72 - 1.38)	0.88 (0.67 - 1.16)
Employment Status			
Employed	0.84 (0.70 - 1.01)	0.62 (0.48 - 0.79) **	1.04 (0.84 - 1.27)
Unemployed	0.73 (0.57 - 0.93) *	0.79 (0.43 - 1.48)	0.74 (0.56 - 0.99)*
Not in labor force	1.0	1.0	1.0
Household Income			
< \$15,000	0.91 (0.73 - 1.14)	0.82 (0.56 - 1.21)	1.04 (0.69 - 1.55)
\$15,000 - \$34,999	0.91 (0.77 - 1.07)	0.79 (0.62 - 1.01)	1.00 (0.77 - 1.31)
\$35,000 - \$74,999	1.03 (0.85 - 1.25)	1.00 (0.80 - 1.26)	1.05 (0.79 - 1.40)
\$75,000+	1.0	1.0	1.0
Social Support	1.05 (1.02 - 1.08) **	1.05 (1.00 - 1.11) *	1.05 (1.02 - 1.08) **

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

TABLE APPENDIX 2.4: COMBINED MALE SYMPTOMS SCALE AND MAJOR DEPRESSIVE EPISODE: PREDICTORS OF DEPRESSION

	Full Model OR (95% CI)	Stratified: Male OR (95% CI)	Stratified: Female OR (95% CI)
Sex			
Male	1.0	N/A	N/A
Female	0.72 (0.60 - 0.86) **	N/A	N/A
Age	0.99 (0.98 - 0.99) **	0.99(0.97 - 1.00) *	0.99(0.98 - 0.99) **
Race/ethnicity			
Non-Hispanic White	1.0	1.0	1.0
Non-Hispanic Black	0.53 (0.36 - 0.78) **	0.56(0.33 - 0.95) *	0.51(0.34 - 0.79) **
Hispanic	0.72 (0.51 - 1.00) *	0.59(0.38 - 0.91) *	0.88(0.59 - 1.32)
Other	1.07 (0.70 - 1.63)	1.49(0.74 - 2.98)	0.83(0.47 - 1.47)
Education			
0 – 11	1.0	1.0	1.0
12	1.14 (0.80 - 1.63)	1.08(0.65 - 1.78)	1.30(0.78 - 2.19)
13 – 15	1.10 (0.80 - 1.51)	0.96(0.63 - 1.45)	1.31(0.75 - 2.31)
16+	0.77 (0.57 - 1.04)	0.57(0.36 - 0.91) *	1.05(0.56 - 1.97)
Marital Status			
Married/Cohabitate	1.0	1.0	1.0
Divorced	0.99 (0.73 - 1.33)	1.01(0.66 - 1.55)	0.96(0.64 - 1.43)
Never Married	1.89 (1.28 - 2.79) **	2.03(1.20 - 3.44) **	1.83(1.16 - 2.89) *
Employment Status			
Employed	1.15 (0.53 - 2.52)	1.41(0.43 - 4.64)	1.03(0.40 - 2.69)
Unemployed	0.79 (0.24 - 2.57)	0.45(0.040 - 5.11)	1.17(0.24 - 5.69)
Not in labor force	1.0	1.0	1.0
Household Income			
< \$15,000	1.03 (0.65 - 1.63)	0.87(0.41 - 1.86)	1.10(0.67 - 1.81)
\$15,000 - \$34,999	1.18 (0.79 - 1.77)	1.03(0.54 - 1.97)	1.23(0.78 - 1.94)
\$35,000 - \$74,999	1.08 (0.68 - 1.72)	1.04(0.49 - 2.20)	1.09(0.67 - 1.76)
\$75,000+	1.0	1.0	1.0
Social Support	1.05 (1.01 - 1.09) *	1.05(1.00 - 1.10)	1.05(1.00 - 1.10) *
Job Function	1.17 (1.14 - 1.20) **	1.18(1.12 - 1.24)**	1.17(1.13 - 1.20) **

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

TABLE APPENDIX 2.5: COMBINED GENDER INCLUSIVE DEPRESSION SCALE AND MAJOR DEPRESSIVE EPISODE: PREDICTORS OF DEPRESSION

	Full Model OR (95% CI)	Stratified: Male OR (95% CI)	Stratified: Female OR (95% CI)
Sex			
Male	1.0	N/A	N/A
Female	1.45 (1.16 - 1.81) **	N/A	N/A
Age	0.99 (0.98 - 1.00) **	0.99 (0.97 - 1.00)	0.99 (0.98 - 1.00) **
Race/ethnicity			
Non-Hispanic White	1.0	1.0	1.0
Non-Hispanic Black	0.55 (0.39 - 0.77) **	0.66 (0.38 - 1.17)	0.46 (0.30 - 0.72) **
Hispanic	0.69 (0.47 - 1.01)	0.58 (0.34 - 0.98) *	0.81 (0.54 - 1.22)
Other	1.17 (0.82 - 1.69)	1.46 (0.77 - 2.76)	0.96 (0.51 - 1.80)
Education			
0 – 11	1.0	1.0	1.0
12	0.90 (0.64 - 1.27)	0.89 (0.51 - 1.56)	0.93 (0.55 - 1.57)
13 – 15	0.90 (0.63 - 1.29)	0.87 (0.56 - 1.37)	0.90 (0.53 - 1.53)
16+	0.73 (0.55 - 0.98)*	0.68 (0.45 - 1.02)	0.77 (0.46 - 1.28)
Marital Status			
Married/Cohabitate	1.0	1.0	1.0
Divorced	1.04 (0.82 - 1.32)	1.04 (0.73 - 1.48)	1.01 (0.68 - 1.51)
Never Married	1.99 (1.41 - 2.83) **	1.74 (1.02 - 2.98) *	2.19 (1.36 - 3.53) **
Employment Status			
Employed	0.82 (0.38 - 1.75)	0.95 (0.29 - 3.06)	0.72 (0.30 - 1.71)
Unemployed	0.52 (0.20 - 1.39)	0.25 (0.021 - 2.93)	0.85 (0.20 - 3.68)
Not in labor force	1.0	1.0	1.0
Household Income			
< \$15,000	1.23 (0.79 - 1.91)	1.17 (0.57 - 2.40)	1.28 (0.72 - 2.25)
\$15,000 - \$34,999	1.09 (0.72 - 1.64)	1.03 (0.55 - 1.91)	1.19 (0.73 - 1.96)
\$35,000 - \$74,999	1.08 (0.70 - 1.65)	1.16 (0.57 - 2.35)	1.04 (0.59 - 1.83)
\$75,000+	1.0	1.0	1.0
Social Support	1.04 (1.00 - 1.07) *	1.03 (0.98 - 1.09)	1.05 (1.00 - 1.10)
Job Function	1.13 (1.10 - 1.17) **	1.12 (1.07 - 1.18) **	1.15 (1.11 - 1.18) **

Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$